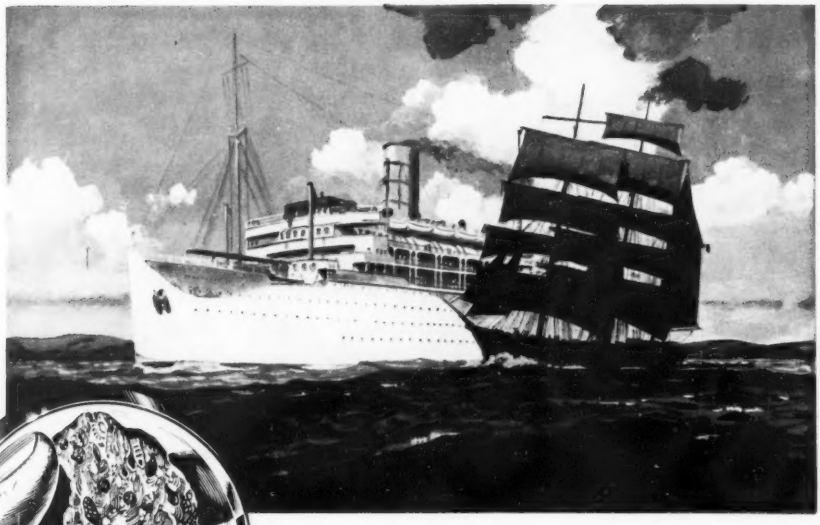
The
SHIPPING WORLD
AND SHIPBUILDING & MARINE ENGINEERING NEWS

VOL. CXXIV No. 3008 WEDNESDAY, FEBRUARY 21, 1951 Price 1/6

REPAIRS
ON THE MERSEY . . .

GRAYSON ROLLO & CLOVER DOCKS
LIMITED
IX PRIVATE DOCKS ON THE MERSEY



Sea-shell embedded in Oil-bearing limestone

From the sea—back to the sea. Millions of years ago marine organisms were deposited on sea-beds and buried under sedimentary rock. By some means science has yet to discover, they became converted into oil. The rocks where it lay emerged from the water and became dry land. In the oilfields of Persia to-day, several hundred feet above sea-level, you can in half an hour pick up a hatful of perfectly fossilised sea-shells such as might be found on any beach. You don't have to be a geologist to appreciate that these must once have been below water. The oil formed in the distant past now returns to the sea, to be consumed in ships' boilers and engines. The International Bunkering facilities of the Anglo-Iranian Oil Company Limited brings it to your service.

INTERNATIONAL OIL BUNKERING

BP

ANGLO-IRANIAN OIL COMPANY LIMITED

31.8

GENERAL BUNKER SALES AGENTS

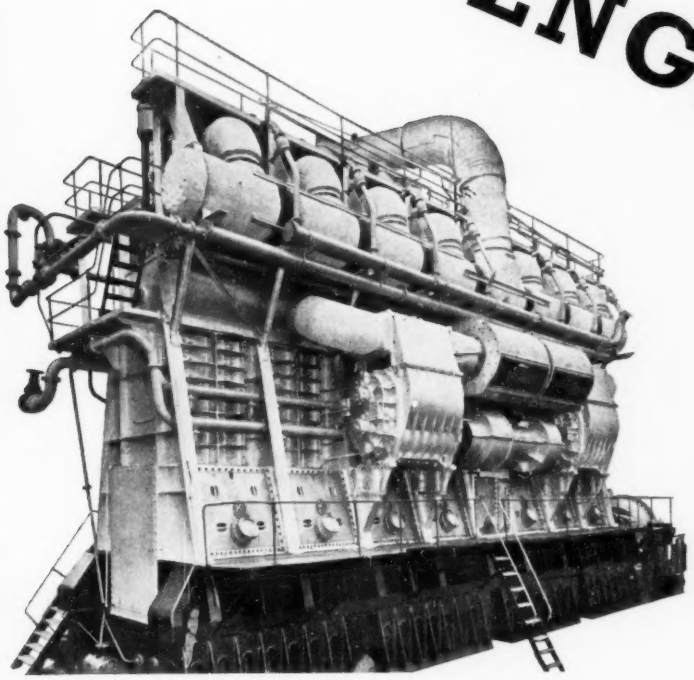
WM CORY & SON LTD

WM. CORY & SON LTD.

CORY BUILDINGS

FENCHURCH STREET, LONDON, E.C.3.

DIESEL ENGINES



Built on the Burmeister & Wain System under licence from Harland & Wolff; also Kincaid-Polar Engines

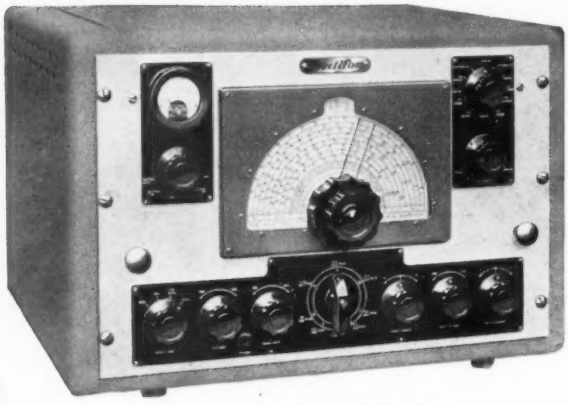
by KINCAID

JOHN G. KINCAID & CO., LTD • GREENOCK • SCOTLAND

ALSO BUILDERS OF:—

STEAM ENGINES for all classes of fast passenger and cargo vessels

BOILERS of all types up to the largest sizes



IN A CLASS BY ITSELF

THE REDIFON R.50 . . .

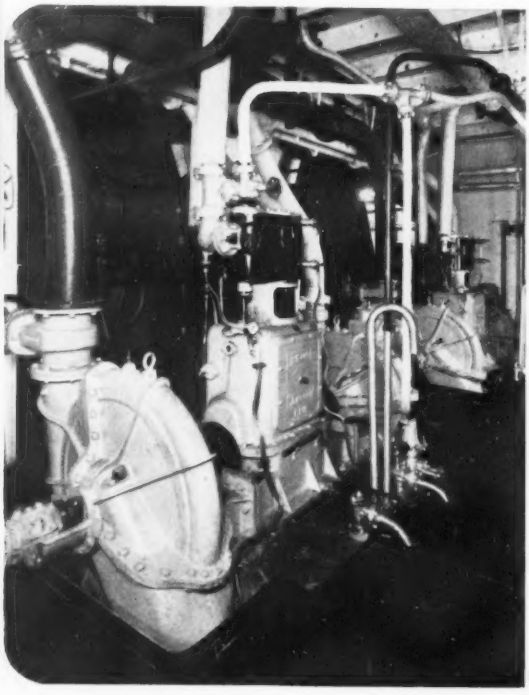
. . . . is the only receiver in the world covering the entire maritime wave-bands in a single instrument and is fully type approved to the latest British Post Office specification as a Ship's General Purpose Main Receiver. Full details are available on application.

MARINE Redifon Radio

Marine Communications Division

REDIFON LIMITED, BROOMHILL ROAD, WANDSWORTH, S.W.18

DESIGNERS & MANUFACTURERS OF RADIO COMMUNICATIONS & INDUSTRIAL ELECTRONIC EQUIPMENT. Phone: VANdyke 5691



DRYSDALE

Steam

PUMPING ENGINES

Centrifugal split casing Pumps driven by high speed F.L. Engines of standard and "Thermall" patent design for Main Circulating, Ballast and Jacket and Piston Cooling Duties.

Illustrated is a Combined Unit designed specially for servicing DOXFORD Engines.

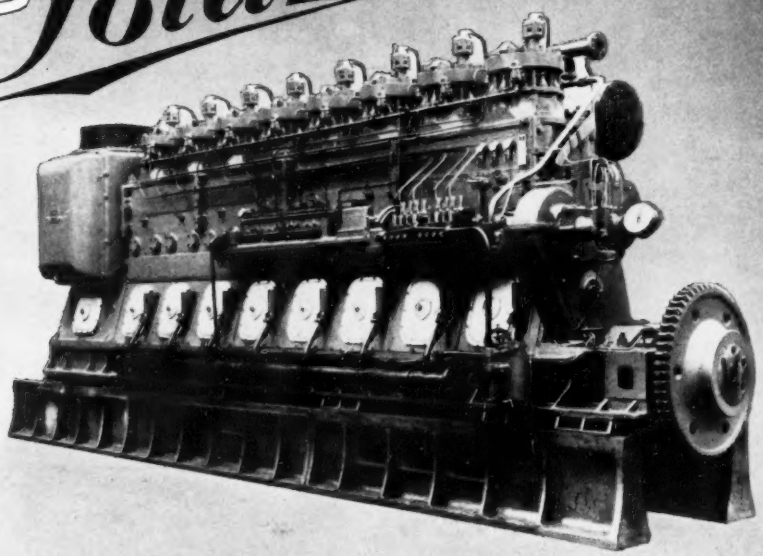
AVAILABLE IN A RANGE OF SIZES AND CAPACITIES TO SUIT ALL REQUIREMENTS

Write for Illustrated Brochure P.E.2.

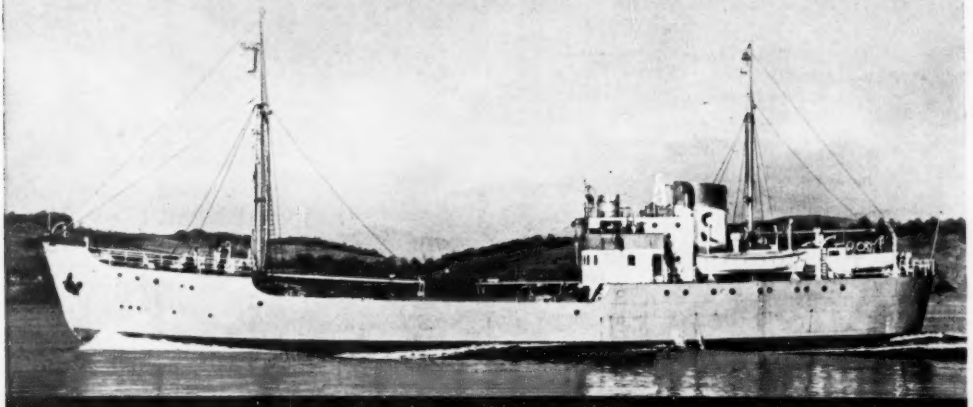
DRYSDALE & Co. Ltd. YOKER · GLASGOW

BRITISH *Polar*

SEAL CATCHER
"THERON"



SHIPS POWERED WITH BRITISH POLAR ENGINES



BRITISH POLAR ENGINES

Phones:- GOVAN 1241-2-3. LIMITED *Grams:- BRITPOLAR, GLASGOW.*

HELEN STREET, GOVAN, GLASGOW.

Licence-Free

weyroc (REGD)

MAN-MADE **TIMBER**

for

BETTER WORK at LESS COST

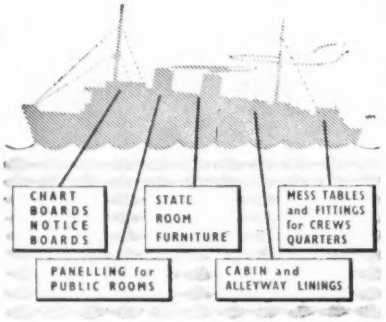


CHART BOARDS NOTICE BOARDS
STATE ROOM FURNITURE
MESS TABLES and FITTINGS for CREWS QUARTERS
PANELLING for PUBLIC ROOMS
CABIN and ALLEYWAY LININGS

WEYROC " goes to sea " with the approval of the Ministry of Transport. It goes too, with the approval of those who build and re-fit ships—for Weyroc is the modern, knot-free, flame-resistant timber that has the strength to take cabin fittings without inserts and yet can be worked by normal woodworking methods. In practice its use often involves *less* work : as an example, the extra wide boards are free from warping and so can be butted together without cover strips when used for alleyway linings. The result—a better finished job with less labour and less materials. Weyroc cuts the cost of building the finer ships of tomorrow.

WEYROC is available in large boards ½" and ¾" thick in three grades: Plain, Paper-surfaced, needing no filling before painting, and decorative Veneered.

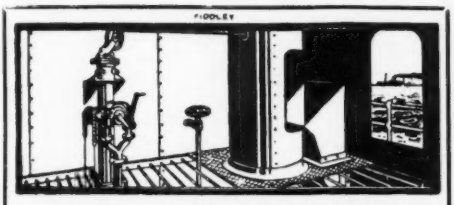
MAIN DISTRIBUTORS

BOURNEMOUTH: Sherry & Haycock Ltd. **BRISTOL:** Bryce White & Co. Ltd. **CARDIFF:** John Bland & Co. Ltd. **EXETER:** Gabriel, Wade & English Ltd. **LEEDS:** Alvin Morris & Co. (Timber) Ltd. **LIVERPOOL:** Chas. Taylor, Sons & Co. Ltd. **LONDON:** Gabriel, Wade & English Ltd. E. Sherry Ltd., John Lenanton & Son Ltd. **MIDLANDS:** J. O. Walker & Co. Ltd., Leicester. C. Walsh Graham Ltd., Wednesbury, Staffs., **NEWCASTLE:** J. T. Dove Ltd. **SCOTLAND :** Brownlee & Co. Ltd., Glasgow.

The Airscrew Company & Jicwood Ltd.

Weybridge, Surrey

Telephone: Weybridge 1600 *Telegrams: Airscrew, Weybridge*



THE " CROMPTON "

Atmospheric Silent Ash Hoist

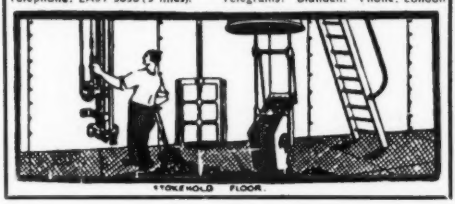
Operated from Stokehold floor
Overtime unnecessary.
Ashes discharged by men on watch.

BLUNDELL & CROMPTON LTD.

Engineers · Ship Repairers · Founders · Coppersmiths

Head Office and Works
West India Dock Road, LIMEHOUSE, LONDON, E.14.
Branch Works, Tilbury Docks, Essex

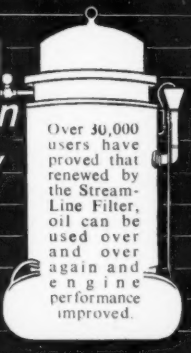
Telephone: EAST-3838 (3 lines). Telegrams: "Blundell." Phone: London



OIL ECONOMY

plus

increased *lubrication efficiency*

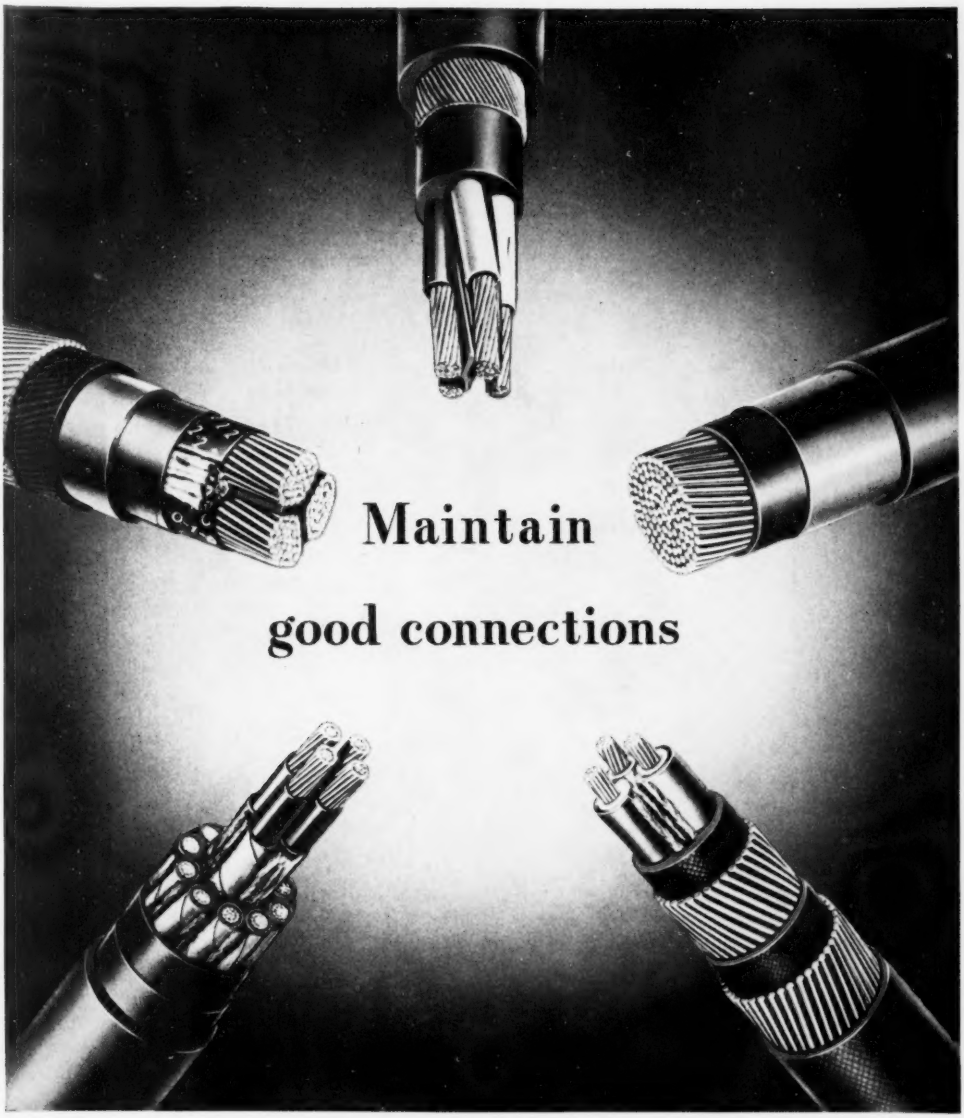


Over 30,000 users have proved that renewed by the Stream-Line Filter, oil can be used over and over again and engine performance improved.

Good Oil does NOT wear out

STREAM-LINE FILTERS LTD

HELE-SHAW WORKS, INGATE PLACE, LONDON, S.W.8 PHONE: MACAULAY 1011

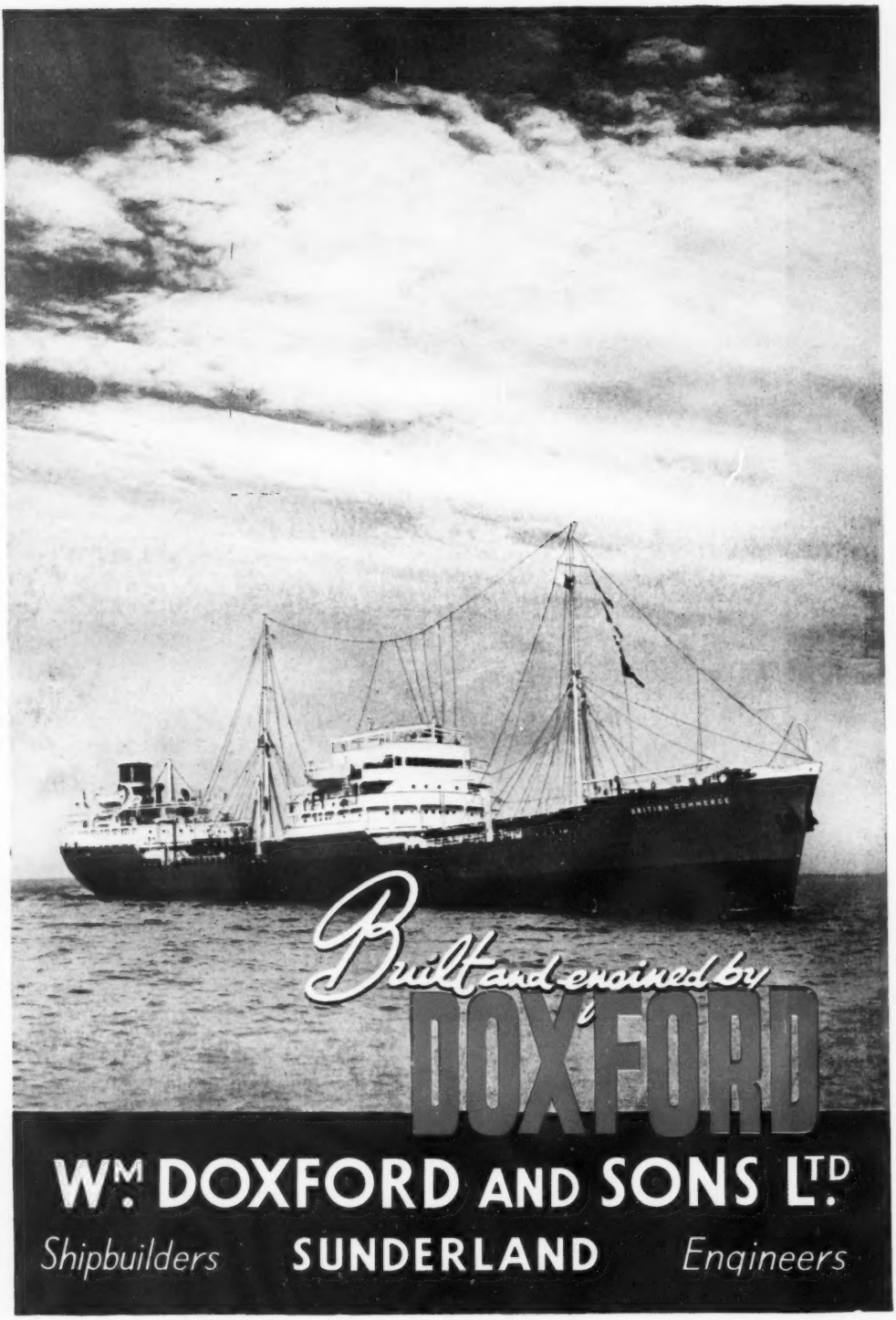


EDISWAN CABLES

The Edison Swan Electric Co., Ltd. Head Office: **155 Charing Cross Road, London, W.C.2**

Member of the A.E.I. Group of Companies *Cable Works: Lydbrook, Gloucestershire*

C45


BRITISH COMMERCE
Built and engined by
DOXFORD
WM. DOXFORD AND SONS LTD.
Shipbuilders SUNDERLAND Engineers

The SHIPPING WORLD

AND SHIPBUILDING & MARINE ENGINEERING NEWS

The Oldest Weekly Journal devoted to Shipping, Shipbuilding, Marine Engineering, Shiprepairing, Insurance and Finance

FOUNDED 1883

Chairman and Managing Director of The Shipping World, Ltd. :—SIR ARCHIBALD HURD

Editor :—PETER DUFF *Managing Editor* :—RONALD KENDALL, M.C.M.S., A.M.I.N.A. *Advertisement Manager* :—M. B. FIELD

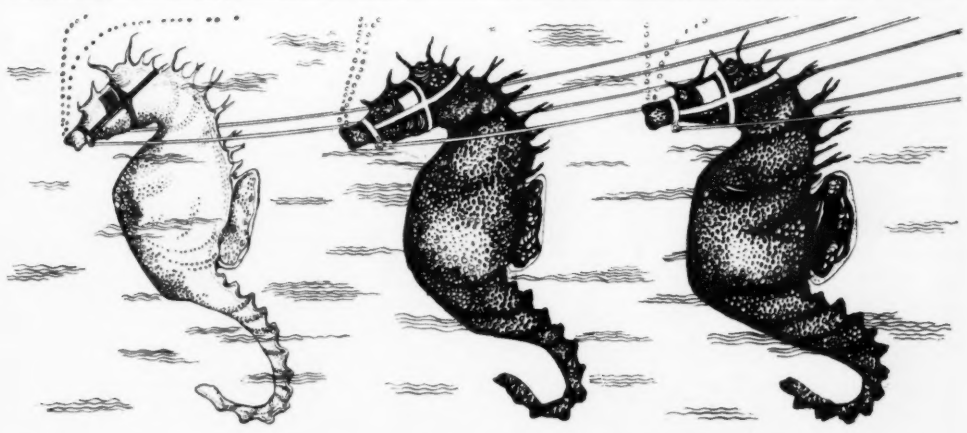
Annual Subscription 70s.

Head Offices : 1, Arundel Street, London, W.C.2. (Temple Bar 2523)
Telegrams : "Shipping World," London

Northern District Manager : W. S. Wilson, M.I.E.E., 27 Exchange Buildings, Newcastle-on-Tyne. Telephone : Newcastle 27078

Vol. CXXIV. **WEDNESDAY, FEBRUARY 21, 1951** **No. 3008**

Government Trading and Taxation	191	The B.T.H. Gas Turbine	203
Current Events	191	Recent Publications	204
On the "Baltic"	195	Marine Air Conditioning	205
Coal and Oil	196	Lighting in the "Queen Mary"	206
Book Reviews	196	Round the Shipyards	207
British Shipping in 1950-51	197	Pictures	208
Yugoslavia's Merchant Fleet	201	New Contracts, Launches, Trial Trips	209
Seafarers' Health Prospects	202	Maritime News in Brief	210



One third of the world's motor-ship horsepower is lubricated by SHELL OIL

Of all the motor ships in the world over 1,000 tons, more than one third of the total horsepower (over 4,000,000 out of 12,000,000 h.p.) is lubricated by Shell. Shell Marine Oils are the result both of constant scientific research and of years of *practical* experience gained in the world's navies and mercantile vessels.

SHELL LEADERSHIP IN LUBRICATION

H&W
HARLAND AND WOLFF
Two-cycle single-acting, cross head engine
Opposed Piston
ECCENTRIC
MARINE OIL ENGINES
Smooth Running · Compact Design · Easy Overhaul · Rigid Construction
Alternative continuous use of Furnace Oil
BELFAST GLASGOW LONDON LIVERPOOL SOUTHAMPTON
SOLE LICENSEES OF THE B & W SYSTEM FOR THE BRITISH COMMONWEALTH

THE SHIPPING WORLD

GOVERNMENT TRADING AND TAXATION

THE SHIPPING INDUSTRY cannot, and does not, have any political affinities or party attachments. The Chamber of Shipping, whose annual report is published in this issue of THE SHIPPING WORLD, has, indeed, been able to work harmoniously, in peace as in war, with Governments of all political colours, and its relations with the Ministry of Transport, in particular, have been excellent. At the same time, the industry, through its principal organisations, the Chamber of Shipping, the Liverpool Steam Ship Owners' Association and the General Council of British Shipping, has never been afraid to express in a forthright manner its views on matters of public policy—and the welfare of the British shipping industry is a vital matter of direct concern to every inhabitant of these islands. Hence the annual report of the Chamber of Shipping has some plain words to put forward about two matters of prime importance in which Government policy is adversely affecting the shipping industry, namely Government trading and taxation.

The experience of the last months of 1950, and the difficulties which the nation experienced as a result of the inefficiency of the bulk buying system, affected the shipping industry, perhaps, more closely than most industries, and certainly more closely than the individual, although on this occasion even the private citizen, man, woman and child, was warned of the consequences by the meagre size of the weekly meat ration on his plate. But what thought does the average meat consumer, let alone the bulk buyer of meat, give for the costly refrigerated ships which were built by the shipping industry, now lying idle or being employed uneconomically in trades for which they were not designed? Similarly with bulk chartering, which is the inevitable concomitant of bulk buying, Government departments have amply demonstrated the deplorable dislocation which they can bring about. Normal commercial trading is far more sensitive to market conditions than the slow-moving machinery of a Government department can possibly be, and individual firms can adjust their arrangements without the disturbance of the tonnage markets that inevitably follows the discovery of a " short position " by a Government purchaser. As the Chamber's report puts it, " it is disconcerting to find these ' discoveries ' being made so often and with such mystifying suddenness." The sudden announcement that the British Government was going to import a large quantity of coal had most serious repercussions on the world tonnage situation. No private importer would have broadcast this fact to the world, in the full knowledge that shipping was fuliy employed and that the consequence of this abnormal demand would force freight rates skywards in an international competitive market. Nor would private traders have so timed their demands for tonnage to coincide with the urgent demands of other bulk buyers for shipments of timber and grain. The bulk buyers were, in the event, saved from the most serious consequences of their own actions by the voluntary restriction of the British shipping industry on its own freedom of enterprise, a process which must not be repeated if shipping is to continue providing its handsome earnings of foreign exchange.

The continuance of the bulk buying system is steadily diminishing the power of the shipping industry to maintain the modern and efficient fleet it needs to meet growing foreign competition and continue its valuable services to the nation, and this process is being accelerated by the heavy drain on its resources incurred by the present high rate of taxation. Doubtless this question will be referred to in more detail at tomorrow's annual meeting of the Chamber of Shipping, but the annual report itself draws attention to the urgency of the problem as it affects shipping, an industry which must be treated as a special case, with its plant subject to such wear and tear that it requires total replacement in a comparatively short period of time. The problem is urgent, for no taxation relief can be of any avail if it is delayed until there are no resources left to replace ships because of excessive taxation in earlier years. Rates of profits and income tax, by depriving the industry of more than one-half even of those profits which are retained in the business, have magnified the iniquities of the present system, and the prospect of even higher rates of taxation, as a result of rearmament and defence expenditure, makes it all the more important to see that the least possible harm is done to those industries on which the nation depends for its wellbeing in time of peace and its safety in time of war.

Current Events

Japan's Shipping Future

SHIPOWNERS in the United States are watching their own diplomats and those of other countries now that negotiations are about to begin for a peace treaty with Japan. In such talks there is always a tendency for the landsmen who gather on such occasions to pay little regard to shipping interests, as our own experience in the case of Germany after the First World War proved. In fact, our spokesmen were so open-hearted in dealing with our late enemy that the Germans, having entered on the struggle with 5,459,296 tons gross and on their surrender being left with only 672,671 tons gross, by 1939 were well on their way to their prewar strength —4,492,708 tons—with reactions on the shipping under other flags which are familiar to shipowners of other countries. On the other side of the Atlantic, they are not ignorant of this experience and so they stand on guard as the ground is being prepared for peace talks with Japan. The latest report from Washington states that officials of the State and Army Departments, as

well as the Maritime Administration, are examining means of helping Japan to increase her ocean-going shipping. They denied reports that it had been decided to lend her 40 United States Liberty ships. On the other hand, the National Federation of American Shipping makes no secret of its conclusion that Japan's claims for permission to expand the merchant marine are exorbitant. An increase of 40 to 100 ocean-going ships would mean, in the opinion of American shipowners, that Japan would be able to carry all her foreign trade. She would be back in the position of being able to cut into the shipping of other nations because of the low rates of pay for Japanese seamen. In the circumstances, shipowners generally would do well to watch carefully the negotiators of the peace treaty, who probably have no conception of the importance to other countries of a fresh invasion of the trade routes by Japanese shipping. Japan must, of course, come back, but the terms on which she does so must be very carefully considered.

The Argentine Dispute

SHIPOWNERS, and not only British shipowners, will welcome the possibility of an early resumption of meat shipments from the Argentine. Negotiations are to be resumed on the initiative of the Ministry of Food. Mr. Webb, who inherited the trouble from his predecessor, failed, as the new broom, to clear up the mess. Instead he made matters worse by his tactless criticisms of the Republic, as Mr. Strachey had done during his term of office. The result is that no meat has been shipped since July; the housewife, as a result, is getting little more than a pennyworth of butcher's meat a day; and the butchers are receiving a subsidy at the rate of about £13,000,000 per annum. Mr. Webb has become the most unpopular member of the Government, while M.Ps in the House of Commons frankly confess that his failure has done the party great harm in the constituencies where the women are harrassed to the point of voting for any candidates who will promise not to support the Government. Moreover, all who are concerned with shipping in and about the River Plate are disgusted with the mishandling of the problem. So the Minister of Food, driven into a corner and anxious to escape more verbal brickbats, has asked that negotiations with the Argentine authorities shall be reopened. Of course, his stubborn attitude has been made more conspicuous by the statement from Buenos Aires that, if the British will abandon bulk buying, President Peron's Government will abandon bulk selling, leaving traders on both sides to work out a solution of the present impasse. It is true, as Mr. W. C. Warwick recently told the shareholders of the Houlder Line, Ltd., that hopes of a settlement have in the past been disappointed. But the force of circumstances does now support some confidence that agreement will be reached. What will follow? In spite of Mr. Webb's recent assurance that bulk buying would not be abandoned, will the traders who carried on the business so successfully in the past, obtaining for us ample supplies of high quality meat at reasonable prices, be called in at an early date? That is what happened in the case of certain kinds of timber.

A Parallel Case

IN January last year the President of the Board of Trade declared that a return to private buying of any timber would not be authorised in the foreseeable future. He, thereupon, became embroiled in a dispute with Sweden, declaring that he would do without their timber rather than pay their price. The Swedes disposed of their timber and we, like Mother Hubbard's dog, had none. Mr. Wilson made large purchases in Canada and America at much higher prices than the Swedes had asked. Then, in October last, to everyone's surprise, he offered to allow the trade to buy all Scandinavian and some other softwoods. That offer was accepted, with some suspicion, which proved to be justified. The Swedes increased their prices to compare with those of Canada and America. Today, the price of timber in Sweden is over 50 per cent higher than the figure declined by Mr. Wilson a year ago. "One would like to think," an informed correspondent of the *Daily Telegraph* has remarked, "that Mr. Wilson bore these facts in mind when he took up that most dangerous of all positions open to a bulk buyer—the uncompromising refusal to accept prices put forward by a foreign Government, thereby invoking an international dispute when bargaining between traders was all that was required." As to the meat muddle—

How does one assess the value to Britain of a ton of meat? Mr. Webb told the House that the Argentine Government were asking four or five times the prewar price. This would be less than the rise in the price of timber. If the comparison were made with some other raw materials the price asked by the Argentine would be a cheap one, yet I imagine few people would admit the validity of any such comparisons.

Mr. Webb has seemingly come to the conclusion that the British people would pay a high price if they could get more meat and that they would be able to work better and be in a better mood to rejoice in this year of the Festival of Britain. So he may follow the example of his colleagues at the Board of Trade and shipping, specially built for the South American meat trade, may in the near future be economically employed once more.

Norway's Shipping Earnings

NORWAY, like Great Britain, depends largely for her economic stability on the earnings of her ships and the Government of that country is not so unwilling as ours to encourage owners to build and operate ships. This is to the credit of all concerned in the planning and financing operations of Norwegian shipping since the end of the war. It is stated officially that the orders placed in the United Kingdom in the years 1948-52 have represented 915,000 tons gross and a capital cost of £61,550,000. In addition, 1,443,000 tons gross, at a cost of £106,950,000, are building or have been built in Sweden and other countries. Those orders indicate a high order of enterprise and courage. Now Norway's sterling balances on this side of the North Sea have been greatly reduced and so a loan has been floated in the London market, about half of it, for some unexplained reason, being left with the underwriters though the terms of issue were attractive. Probably British investors do not realise how well the interests of Norwegian shipping are guarded by the Government of that country. It is claimed that, in the present year, the contribution of shipping to Norway's balance of payments will be twice as large as in 1950. Gross freight earnings will be the equivalent of £145,000,000 as compared with £125,000,000 last year. The sale of old ships abroad and certain other revenue will bring the net income up to £70,500,000. On the other hand, payment on new tonnage built abroad will amount to £27,500,000 in comparison with £35,250,000 last year. Deducting these payments from the net income will leave £43,000,000, whereas the figure was only £26,000,000 last year. Of this amount, £11,000,000 will be in Norwegian currency, the same amount as was the case last year, while £32,000,000 will be in various foreign currencies in contrast with £15,000,000 in 1950. Thus, merchant shipping will make a net contribution to the balance of payments £17,000,000 greater than last year. Those are official estimates and there is no reason to doubt them. In fact, Norway's shipping earnings when all her new vessels are delivered will be of greater importance to the prosperity of the Norwegian people than ever before in their history. Of course, tankers are predominant in the merchant fleet, but that is a favourable factor since the future lies with oil rather than with coal. Norway, in sporting phrase, is backing a winner.

American Shipbuilding Contract

CONSIDERABLE interest has been aroused, on both sides of the Atlantic, by the decision of the U.S. Maritime Administration to order 25 fast cargo vessels

at a cost of over £70,000,000. These ships, known as the "Mariner" class, have been designed with more than one eye on defence purposes, for they are to have speeds of 20 knots in service. They will have a length of 525 ft., a beam of 76 ft. and a draught of 29 ft. 8 in. Five shipyards will build five vessels of this type each, the first to be delivered within 480 days and the last within 730 days, the builders being the Newport News S.B. & D.D. Company, Ingalls Shipbuilding Corporation, Sun S.B. & D.D. Company, and the Bethlehem Company's yards at Sparrows Point and Quincy. It is believed that the construction plans of these ships call for the minimum use of "critical" materials, so that production will not be held up through the shortage or scarcity of certain metals and equipment. They will be capable of being armed with modern weapons against submarine, air and surface attack, but, it is noted, they are also planned as replacement vessels for private steamship companies engaged in commercial trading. Few shipping companies, in America or elsewhere, could afford to pay some £3,000,000 for a vessel of this class, even if allowance is made for the defence features, but the American shipowner is used to being spoon-fed by his Government. It does not really matter whether they can be operated economically or not in service. The Government no doubt will make good any losses without question.

Gas Turbine for the "Auris"

THE SPECULATION as to which country would be the first to install a gas turbine in a merchant ship is ended and, just as it fell to Great Britain to be the first to install a gas turbine in a naval vessel, it is a British company which has completed the first gas turbine to be installed in a merchant ship—a British ship. The gas turbine, which is the result of many years of research and development and accumulated experience by the British Thomson-Houston Co., Ltd., has been built to the order of the Anglo-Saxon Petroleum Co., Ltd., for installation in the diesel-electric tanker *Auris*. This is the culmination of a wartime idea of Mr. John Lamb, manager of the Shell Research and Development Department, and this gas turbine was built mainly for the purpose of gaining operating experience under service conditions at sea. The *Auris*, in which the gas turbine is to be installed within the next two months, was specially designed for this purpose, the original intention being that one of her four alternators would ultimately be replaced by a gas turbine driven alternator of equal power. The gas turbine, which is described elsewhere in this issue, is not, of course, able to meet all the requirements of the shipping industry as yet. As no maintenance of the unit will be carried out by the ship's engineers, ease of maintenance and accessibility are not claimed. The width available within the engineroom for the gas turbine necessitated vertical compounding, so that access to the L.P. turbine is gained only by the removal of the L.P. turbine, while heat recovery in the heat exchanger has also been restricted. One other disadvantage, which will no doubt be readily overcome, is that, at present, should either of the two burners supplying oil to the combustion chambers become choked with carbon or give other trouble, the plant must be shut down until the offending burner is replaced. Such details do not, however, detract from the undoubted success of the efforts of the shipowners and manufacturers alike in producing what is essentially a gas turbine for installation in a ship from which further knowledge can be obtained.

Burning of Residual Oil

ONE of the most interesting points noticed by the technical representative of THE SHIPPING WORLD who inspected the gas turbine on test last week at the Rugby works of B.T.H., is that the 860-kW. gas turbine driven alternator set has been operating for some 335 hours on heavy oil having a viscosity of 1,500 secs. Redwood No. 1 at 100 deg. F. Inspection to date has revealed no signs of harmful deposits and there is good reason to think that corrosion and chokage of the passages between the blades usually associated with the burning of residual fuels in gas turbines may not be experienced, due to the fact that the gas turbine is operating at a temperature below that which creates the harmful effects. Sodium salts and vanadium are the deposits which have been responsible for the most serious difficulties associated with the burning of boiler fuels in gas turbines, but the direct attack of the constituents in the ash deposits only begins to any appreciable extent at temperatures of 650 deg. C. and above. As the B.T.H. gas turbine operates below this temperature, it can reasonably be expected that the most harmful effects normally experienced with the burning of residual fuels will be avoided. Absence of noise and vibration are other valuable features of the unit, while heat radiation was found to be negligible. These factors combine to ensure comfortable working conditions when the unit is installed in the ship. The rather high-pitched noise experienced during the earlier tests has been considerably reduced by fitting a silencer to the air intake.

Control of Dock Labour

IN HIS capacity as chairman of the National Association of Port Employers, Sir Colin Anderson has taken the opportunity of putting forward the views of port employers on the present troubles in the docks, particularly in Merseyside and London. He pointed out that the National Dock Labour Board was the only employing agency in the country jointly administered by labour and employers, but events had given cause to doubt whether this arrangement is, in fact, successful. The recent wage agreement was freely accepted by the trade union side of the National Joint Council. The agreement allowed for a minimum rise of 11s. a week, but since 90 per cent of work in the docks is done on piece rates, the increase in earnings would be greater for the majority of dockers. Even before the increase, the average earnings of dockers came to £8 or £9 a week, second in rank only to the miners. Vast improvements in the conditions of dock labour had been introduced, such as guaranteed wages, medical services and holidays with pay, and it was significant that there were never fewer than two men anxious to fill vacancies which occurred, and in some cases there were ten. The trouble was, Sir Colin said, that there were a few men who were intent not on settling grievances, but on creating them, and it was this minority which was causing the unrest in the docks today. The employers had repeatedly urged that the mass of decent dockers should be protected from individuals whose one aim was to keep them in a state of perpetual unrest by undermining all constitutional authority by the employers, the unions and the Government. These men, even if expelled from their unions, cannot be removed from the docks except by disciplinary action under the dock labour scheme. It remained to be seen whether the Labour Board in its present form could effectively discharge the duty of maintaining discipline in the industry, although it would require an Act of Parliament to alter it. Port employers, Sir Colin said, could "go on being patient too long, and that is beginning to be apparent". The employers had tried loyally to make the scheme work, but their present feeling, Sir Colin said, was one of "impotent despair."

Liverpool Underwriters' Report

THE SPECIAL quality of the annual report of the Liverpool Underwriters' Association is that it always deals with maritime matters affecting underwriting interests as well as those immediately concerned with marine insurance. For instance, after dealing with domestic matters, this year's report goes on to record in some detail the circumstances of the "gentleman's agreement" concerning legislation based on the Hague Rules, by which shipowners increase the limit of

liability to £200 per package or unit of cargo while cargo interests agree not to invoke the Gold Clause. The next section deals with port improvements, outlining developments in oil tanker facilities; progress on Merseyside; the extension of facilities at New Orleans; and the situation in Pakistan. Regarding safety at sea, it is recorded that the Convention of 1948 did not come into operation on the due date of January 1, 1950, because the requisite number of nations had not then ratified the convention, but the hope is expressed that the 28 signatory countries which have not yet done so will soon take the necessary steps towards ratification. An improvement in the situation regarding lost propellers is noted, and there are comments on solid ballast, powdered sulphur as cargo, and the revision of U.S. Coastguard regulations. In the section of the report dealing with purely marine insurance matters, justifiable pride is taken in the fact that the open market now covers the whole amount at risk on the *Queen Elizabeth* and *Queen Mary*, while the passing of the old *Aquitania* is recorded as "a milestone in the history of transatlantic shipping." In the subsection dealing with cargo, an important item is the brief account of the result of the 20 test voyages on which the Maritime Association of New York supervised loading and discharge at all ports. It appears that 65 per cent of all cargo discovered damaged during loading and discharging was damaged because of poor packaging. Losses due to loading accounted for 3 per cent of the damage, unloading 15 per cent, stowage 7 per cent, and pilferage 1 per cent. There is much else of interest in the report, which concludes with appendices giving the customary casualty statistics, and it is evidence that the Association, now entering on its 150th year, is by no means afflicted with senile decay.

Norwegian Hull Insurance

NORWEGIAN shipowners are complaining that the London marine insurance market is subjecting their business to unwarranted increases in premium, and it is even hinted that unless the situation improves they will seek other outlets for the considerable surplus amounts that remain to be insured when the national insurance market has taken its fill. Norway has so much modern high-valued tonnage, particularly in tankers, that these surplus amounts are considerable. Three years ago it was Norwegian underwriters who were complaining that London underwriters were rating Norwegian hulls far too cheaply, thereby spoiling their own system of rating. Those complaints were justified. Because during the war Norwegian tonnage was insured *en masse* while it was employed in the service of the United Nations, fleets and individual vessels had no claims records on which renewal rates could be based when they returned to private ownership. The London market treated the business as being outside the scope of the Joint Hull Understanding, and the free quotations of the immediate postwar years were so uneconomic that, in 1948, the Joint Hull Understanding was revised to make it clear that it applied to vessels of all flags and that where three years' figures were not available, renewals should be based on the formulae of the Understanding applied to such figures as were available. The result was that since the initial premiums on which Norwegian tonnage was insured in the immediate postwar years were low, the claims figures called for substantial increases in rates in many instances. This was not in any way a form of discrimination against Norwegian tonnage; it was only the rectification of a previous error of judgment. Norwegian shipowners, having enjoyed over-cheap insurance for a period, were only being asked to pay rates equivalent to those already current among shipowners of nations which had not enjoyed the benefit of the hiatus in the Understandings of 1946 and 1947. It is perhaps natural that, with the increase in rates which was inevitable in the circumstances, Norwegian shipowners should complain, but as for seeking a market elsewhere than in the United Kingdom, any such development would at the worst be only temporary. If the underwriters of other markets were to elect to share the experience of British underwriters by writing hull risks at uneconomic rates, they would also share the experience of burnt fingers and would, in the end, be forced to increase their rates as the London underwriters have done.

Handling of Ore Imports

THE annual report of the British Iron & Steel Federation discloses that the handling of iron ore imports is the subject of a special investigation by the British Iron & Steel Research Association. The most efficient and economical methods for handling imported iron ore at all stages from loading in foreign ports to receipt and use in steelworks are being investigated in detail. An examination of the limitations set by tides, depth of water, size of dock gates, and the like, to the number and size of ore ships that could possibly use the ports has already been made, and detailed studies of the facilities and methods used for unloading ore have been completed at several ports and will be extended to others. Three years ago, it will be recalled, the Ministry of Transport's Working Party on Turnround in U.K. Ports recommended that an investigation of this nature should be carried out, but for any such survey to be complete the whole chain of transportation from ore field to furnace must be taken into consideration. As in all such chains, the strength of the whole is no greater than that of the weakest link. This is a matter of great concern to British and other shipowners, and the enterprise which is being exhibited in investigating it will be widely appreciated.

Education Scheme for Port Workers

A SCHEME which aims to give port workers a greater interest and understanding of their work has emerged as a result of a conference of interested parties who have been meeting during the past year and who have now issued a report. While recognising that a number of port undertakings have satisfactory arrangements for training their staff, the report suggests that there is a need for elementary courses of study directly connected with port work which would meet the educational requirements of employees who do not take advantage of existing facilities. The aim of the courses which have been proposed is "to promote the study of the main essentials of ports and port working, their problems and background," and the subjects are Port Traffic, Port Working, and Port Organisation and Finance. The Institute of Transport has agreed to cooperate in the operation of the scheme and will be responsible for the approval of the syllabuses and the award of certificates. It is hoped that port employees and Trade Unions will give encouragement to their staffs to pursue these courses of study. Current events prove that the scheme is one that deserves support from all who are associated with sea transport.

SAYINGS OF THE WEEK

SHIPS AS WAREHOUSES

"The hire of fifteen refrigerated ships by the Ministry of Food for storage of meat at British ports, between August, 1941, and March, 1950, cost £609,248. The cost of storage in the ships was about two and a half times that of equivalent storage on land."—*Sir Frank Tribe*, Comptroller and Auditor-General.

STEEL EXPORTS

"The Corporation has inherited the advantage of the export sales organisation of the companies which have contributed so substantially to the greatness of the country and to the development of the railways and industrial life of the Commonwealth and overseas."—*Mr. S. J. Hardie*, chairman of the Iron and Steel Corporation of Great Britain.

ON THE "BALTIC"

THE ATTITUDE TOWARDS TIME CHARTERING

By BALTRADER

RATES of hire for time charter are probably higher than ever before, taking into account the large size of vessels now mainly available for deep-sea trading. The 10,000-tons oil-burning steamer of moderate economy is able to command a rate of about 37s. 6d. per ton per month for periods of about six months, compared with about 12s. current early last summer. The value of a first-class fast diesel vessel in the estimation of some time charterers is shown by the fixture of a new Norwegian motorship at 47s. per month for 10 to 12 months. This fixture is subject to a voyage licence being granted by the Norwegian Government, which has resorted to the direction of ships owned by its nationals when required for the import of coal and other commodities.

Rates for American Coal and Grain

Much of the interest in time-chartered tonnage is due to the tremendous rates of freight which are obtainable for carrying American coal or grain to Europe. These are sufficient to show a profit to the operator of time-chartered tonnage in spite of the high rate of hire which he pays to the owner. The owner, on the other hand, may well be content with what he receives; in addition he is relieved of the risk of delay and extra consumption of fuel through bad weather in the North Atlantic and loss of time through possible congestion or strikes in port. Some owners disdain to hand their ships to other people who are prepared to shoulder the normal trading risks for a consideration; but some who at one time would never look at a time charter have modified their attitude in recent years. This may have been caused by the extensive postwar employment of tramp tonnage on time charter by the liner companies. Early last year, for instance, cargoes available to owners of tramp ships were on the whole unattractive, but the liner companies were kept busy by the export drive of this and other European countries and our big trade with West Africa. The time charters offered by the liner companies, particularly for a trip out to Australia or the East, were the best employment offering and could hardly be ignored by the most independent of owners. Whether owners' acceptance of time in preference to voyage charter is good policy is another matter.

Chartering by Liner Companies

Circumstances alter cases, but in general it is the province of the shipowner to estimate the liabilities which he incurs by accepting cargo and on that basis to charge a tonnage rate which will show him a fair return. The charterer is prepared to pay for immunity from unexpected expense; conversely he generally takes good care to keep a large part of the likely profit of a voyage if he hires a ship on time charter. It is not for nothing that ancient trades have always preserved their mysteries as valuable possessions; the shipowner should perhaps be jealous of too much accumulated experience passing from him to his clients. The rates fixed by the liner conferences were until recently set at a higher level than that of current tramp freights. The position has in some cases been reversed and the liner companies have proclaimed their inability to operate time-chartered tramps without heavy loss; they have reduced their time chartering accordingly. Meanwhile cargo for export is accumulating and more active chartering by the liner companies may follow. The natural preliminary—various increases of Conference rates—has been in the news lately.

The grain merchants have, in the past, almost wholly confined their chartering operations to engaging tonnage on voyage basis. Some of them in prewar days would charter a dozen vessels in a day from North and South America, Australia and elsewhere. Bulk buying and selling of cargoes by Governments and chartering by their agents has, of course, displaced much of the business of private operators. The latter often worked on a fine margin, which was sometimes dependent on the securing of dispatch money or a small movement of current exchange. Last summer there was a short-lived essay in private chartering to carry cargo bought and sold by the British and Canadian Governments respectively. This left no scope whatever for the skilful and delicate adjustments by which competitive merchants were able to maintain the flow of trade. This year some of the big grain merchants have come into the market as time charterers on a large scale. At a time like the present sudden releases or purchases of cargo may be almost impossible to implement for want of available tonnage. The merchants accordingly are arranging to have shipping in hand with the widest choice of loading and discharging ports. For this purpose no voyage charter is so well adapted as is a time charter.

The Freight Markets

Advancing rates of freight have been the order of the week. More business would have been arranged but for the extreme reserve of owners, but many vessels have been fixed for coal and grain from the United States to Europe. Tonnage has been taken for coal from Hampton Roads to North France at $15.25, March, to Hamburg at $14.50, Februray/March, to Rotterdam at $13.50, March, and to the United Kingdom at 100s. per ton, March. Recent grain fixtures include *Begonia* and *Sussex Trader*, Gulf to U.K. at 30s. per quarter; American vessels, Gulf to U.K. at $19.50 per ton, March/April; *John P. Harris*, Gulf/U.K., $20, February/March, and a second voyage at $19.50; *Clintonia*, St. Lawrence to West Italy, $15.25, two consecutive voyages commencing May. The *Ivorita* is fixed for grain from Gulf to Sweden, Gothenburg-Ahus range at 160s., 1,000 daily discharge, free, 1/20th April. The *Dea Mazella* has been chartered from Gulf to full range India, grain, at 170s., 1/30th June. *Scottish Monarch* takes lumber and generals, North Pacific to U.K. at 180s. f.i.o., April/May. Several June/July vessels have been chartered from West Australia to U.K. at 140s. bulk, wheat. The rate for grain from the Black Sea has advanced to 85s. basis U.K. discharge, paid for an April vessel. Up and down River Plate to India has paid 175s., heavy grain, prompt. There are many orders for time charter for periods ranging from 3 to 18 months. *Temple Bar*, 10,384 d.w., 10½ knots on 22 tons oil, is fixed for an East Coast South American round at 37s. 6d. per ton per month.

Air Charter Business

A fairly active market for chartering by air is reported, especially for movement of ships' crews and of ships' spares. Tourist flights are freely quoted for the approaching season. In this connection the Air-brokers' Association is dealing with an increasing number of inquiries from travel agents who have become aware of the special facilities at the command of airbroker members of the Baltic Exchange.

The 1951 edition of the Holidays Calendar, published by the Baltic & International Maritime Conference, has now been issued. It gives details of general and local holidays affecting the handling of ships in the most important ports of the world.

COAL AND OIL

FUEL IN THE CHAMBER OF SHIPPING REPORT

FUEL PROBLEMS do not occupy a large space in the annual report of the Chamber of Shipping; nevertheless, the Fuel Committee of the Chamber records its serious concern at the price increases that have occurred in the course of the year for all sorts of oil fuel. In contrast, the general level of coal bunker prices has remained unchanged, though from time to time owners have experienced difficulties in obtaining suitable supplies. This has been particularly so, of course, since November, when restrictions were applied to the supply of bunkers at U.K. ports and the use of U.K. coal in overseas bunker depots. The detailed arrangements communicated to owners were made following consultations with the Fuel Committee. The aim was to reduce to the minimum interference with normal bunkering practice, and to avoid the re-introduction of detailed bunkering control. The industry was assured that the arrangements to restrict the offtake of bunkers in the U.K. would be applied equally to ships of all flags, and that steps were being taken to ensure the maintenance of adequate stocks at overseas bunker depots. Subsequently a concession was secured for liner companies with coal-burning ships regularly on the North Atlantic run, where it would have been unreasonable to require full double bunkering in America; no doubt the ships were not designed to bunker for a round trip. Another small concession, which is, however, of some importance to many owners engaged in overseas trades, was obtained after discussions with the National Coal Board. The lower price applicable to coal bunkers for coasting ships has been extended to cover other ships making voyages between United Kingdom ports.

Coal Exports to Fall Further

SOME INDICATION of the future prospects for coal exports was given last week in a speech by Lord Hyndley, chairman of the National Coal Board. Although every effort would be made to maintain the supplies required under existing contracts, he doubted whether even the present low rate of exports could be kept up for long. At present exports and bunkers together amount to about 150,000 tons a week, which is equivalent to some 7½ million tons a year. Last year 17 million tons of coal were exported, and in 1949, 19 million tons. It certainly appears as though 1949 will go down in history as the year in which the post-war peak in coal exports was reached. Whatever the future may hold, it is very unlikely that those figures will be exceeded. And although Lord Hyndley did not say so, it seems probable that no further contracts for exports of coal will be arranged, so that when the existing contracts are concluded the coal export trade will die. Discussing coal imports, Lord Hyndley said that coal from America was coming along satisfactorily. The Board expected that it would take in the largest tonnage during the present month, and it looked as though that expectation would be fulfilled. The unloading of Victory-type ships at Rotterdam was by no means a panic measure. They always thought it might be necessary at the height of the programme to use Rotterdam or other ports, and transfer the coal to coasters, so that it reached the right place at the right time. The ships—the only ones they could charter—were known to be not really suitable for unloading at the normal British coal wharves, and the Board thought it was doubtful whether the whole operation would cost any more than if the ships had discharged directly in United Kingdom ports.

New Oil Agreement with Standard

THE NEW agreement, announced last week by the Minister of Fuel and Power, between H.M. Government and the Standard Oil Company (New Jersey), will have the effect of increasing still further the company's activities in the sterling area. In return for a further decrease in the dollar content of its oil, the company and its affiliates in the sterling area are to be allowed the same freedom of operation as is accorded to the British companies. Among the immediate steps being taken by the Anglo-American Oil Company (the U.K. company in the Esso group) are the purchase of substantial amounts of oil from sterling sources, and the advancement of the completion date of the new refinery at Fawley. The company has also asked for bids from British shipyards for four tankers similar to the two 26,500-tons vessels already on order from Vickers-Armstrongs, Ltd., Barrow. It is estimated that by 1954, when it will be in full operation, the annual saving of hard currency through the scheme will amount to 150 million dollars.

First Tanker at New Oil Dock

The first cargo of crude oil to reach the new oil dock at Finnart, on Loch Long, arrived on February 5. It consisted of 22,400 tons of oil from Kuwait, and was brought by the Norwegian tanker *Tank Empress* (24,000 tons deadweight) on charter to the Anglo-Iranian Oil Co., Ltd. The Finnart depot is connected with the expansion project of Scottish Oils Limited (a subsidiary of Anglo-Iranian), which is raising the capacity of its Grangemouth refinery from 600,000 to 1,800,000 tons per annum. The depot will be connected to the Grangemouth refinery by a 12-in. pipeline, 60 miles in length, stretching across Scotland from Loch Long to the Firth of Forth. This is now nearing completion. Work on the Finnart depot was begun in May 1950 and despite difficult conditions, including 11.8 in. of rainfall in one month alone, it has been made ready to receive the first cargo two months ahead of the originally scheduled date.

BOOK REVIEWS

The Isle of Wight, by R.L.P. and Dorothy M. Jowitt. (B. T. Batsford, Ltd., 15 North Audley Street, London, W.1. Price 8s. 6d.)

This historical and topographical description of the Isle of Wight is written in a most readable fashion and supported by excellent illustrations. Naturally there is a chapter which deals with the island's association with yachting and another which deals with shipbuilding, including an interesting account of the story of J. Samuel White & Co., Ltd. This is a book well worth an investment for anyone proposing to visit the island, either on holiday or on business.

Applied Electronics Annual, 1951. (British-Continental Trade Press, Ltd., 222 Strand, London, W.C.2. Price £2.)

This is the first edition of a new annual designed to cover the many applications of electronics in the industrial and other fields. There is a series of articles on different aspects of electronics, one of which deals adequately with the marine field. There follow directories of manufacturers and supplies of component parts, and a buyer's guide in which firms' names are listed under the items of equipment that they supply.

Reed's Nautical Almanac, 1951. (Thomas Reed & Co., Ltd., 184 High Street West, Sunderland. Price 7s. 6d. net.)

The 1951 edition of this well-known annual, invaluable to the master of coastal shipping and to the yachtsman, contains all its usual features. The chief alterations that have taken place are in the section on tides and tidal streams. The information on all minor ports is now grouped on pages which come next to the major port to which it has to be applied. The tidal streams—extended by charts for the Thames Estuary and North-West England and Wales—are also grouped near the ports concerned. The pages of lights and buoys have been thoroughly revised.

Annual Report of the Chamber of Shipping

BRITISH SHIPPING IN 1950-51

THE INTERNATIONAL OUTLOOK : BULK BUYING AND TAXATION

THE deterioration of the international situation in the second half of 1950 had its inevitable effect on the shipping industry, and the annual report of the Chamber of Shipping of the United Kingdom states that to the normal activities of the Chamber and the General Council of British Shipping was added the important task of liaison between the Government and British shipowners in an attempt to surmount the serious problems arising from shortage of shipping. Domestic emergencies added to the difficulties.

The war in Korea and the resulting demand for tonnage by the American Government, and afterwards the British Government, began to have their effect in July, and in the succeeding months there was probably employment for all available deep-sea ships.

The situation was, however sharply affected when in November the Government suddenly announced its intention to import coal from the U.S.A. to make good the deficiency in home production. Such a request for a large volume of tonnage at this particular moment, and at such short notice, seemed at first sight to be one with which it was almost impossible to comply.

Immediate steps were taken to ascertain what ships could be released from charter by liner companies and what tramps were in a position, or could be released from other employment, to respond to the Government's urgent request. The first point was referred to the liner conferences. The second was dealt with by a circular to tramp shipowners, asking them to supply particulars of any of their ships, fixed or unfixed, which were suitably placed for the purpose. The information so received was communicated to the Ministry and fixtures for coal were then arranged on normal commercial lines. The response from both sections of the industry was gratifying.

Almost immediately, however, other important priorities were notified to the industry—timber from the Pacific and coarse grain from the Gulf—and the importance of a heavy movement of grain from the United States to India was stressed by the Government. As a result of the willing cooperation on the part of the British shipping industry, the Government's immediate tonnage requirements were met, and the thanks of the Minister of Transport were conveyed to owners for their help.

Though its cooperation was willingly given the industry, throughout, made clear its view to the Ministry that the sooner the dislocation brought about by the diversion of tonnage to meet sudden and emergency demands of this nature could be ended, and the market allowed to settle down, the better it would be for all concerned. In the middle of January it was possible to advise owners that charterers would rely entirely on market procedure to meet their tonnage requirements although, at the same time and at the request of the Ministry of Transport, the importance in the national interest of maintaining a steady flow not only of bulk imports to the U.K. but of vital exports from it, was stressed.

Government Trading

The experience of the closing months of the year seems to call for reflection on the effect on the shipping industry of Government trading. Normal commercial trading is far more sensitive to market conditions than are Government departments, and adjustments are made more rapidly by individual firms than is possible under the slow machinery of bulk buying. And they are made without the disturbance of the tonnage markets that inevitably follows from the discovery of a "short position" by a Government purchaser. It is disconcerting to find "discoveries" being made so often and with such mystifying suddenness.

Once a decision had been made to purchase coal from America it is inconceivable that any private organisation would have announced to the world, as did the Minister of Fuel and Power in Parliament, that it was about to purchase a large quantity of coal from a foreign country, with the knowledge (which ought to have been in the possession of the Minister) that shipping was fully employed and that the consequences of this abnormal demand would be to force up freight rates. . . . Nor would private traders have so timed their demands for tonnage for timber and grain purchases as to call for a continuing and urgent need for shipping space.

The dislocation brought about by bulk buying can be deplorable. In the instance under discussion the liner companies, in releasing tramp ships from charter, had to disappoint oversea merchants by their inability to complete their shipping programmes. Liner companies are jealous of the goodwill they have built up over very many years, goodwill which experiences of this sort can easily damage. The function of the tramp ship in the past, when properly exercised, has been to allow a continual flow of commodities between different countries, the ships themselves in certain trades acting as mobile warehouses; the cargoes could change hands before the voyage was completed. A system which entails tramp ships steaming *en masse* in ballast half across the world in order to bring back their cargoes denies them that flexibility on which their maximum usefulness depends.

To take another example, the cessation of meat imports from the Argentine, owing to the bulk buyers being unable to agree on prices with the bulk sellers, has meant considerable losses to British liners in that trade. No meat cargoes have been brought to this country from the Argentine since the end of July, and the special refrigerated ships built for this trade have had to be put to other uses. While it has been possible to divert some of these fast, expensive ships to other routes, they are not being used to the best advantage. Moreover, in some cases, they have had to be employed uneconomically for the carriage of general cargo.

Merchant Fleets and Freights

The industry's shipbuilding programme is essentially long-term and merchant fleets are adjusted to meet long-term average demand. Building to meet peak demand is clearly uneconomic and would lead to violent fluctuations in the amount of employment, not only of ships but also of their crews—a result which would cut right across any policy of full employment. Freight rates for tramp ships are bound to rise when there is a sudden pressure of demand. The movement is no more within the control of the British shipowner than of his foreign competitors. No artificial restriction could be imposed on an international industry like shipping except by international control; it is an industry in which the law of supply and demand operates freely.

While attention has been focused perhaps not unnaturally on the rise in freight rates, as shown by the Chamber's monthly index, there is another curve in the background of equal importance, that of operating costs, which continues to go up with a steady and alarming insistence, contrasting with the fluctuations in movements of freight rates. It is noteworthy that for 1950 the yearly average of the Chamber's index number of tramp shipping freights is little more than for 1949, and that both are well below the average for 1948.

Taxation

Two years ago the Chamber referred to the difficulty of maintaining the industry's working capital in the face of present taxation. Rates of income tax and profits tax, by depriving the industry of a half of even those profits which are retained in the business, have magnified the inequities in the system itself, and the prospect of continued high rates of taxation makes

it the more important that the basis of taxation should be such that the least possible harm is done to those industries on which the nation depends for its well-being and for its safety. The incidence and effects of the present system of taxation are all the time steadily diminishing the power of the industry to maintain the modern and efficient fleet by which alone it can meet competition and continue its services to the nation. No taxation relief will be of any avail if it be delayed until there are no resources to replace tonnage because of excessive taxation in earlier years.

Every demand for a modification of taxation policy to enable shipping companies to renew their fleets is met with the statement that this would involve treating shipping as a special case. The answer of the industry is that shipping *is* a special case and that two world wars ought to have demonstrated this fact. Without an efficient mercantile marine this country could never have survived. On grounds of national security alone, therefore, the industry has an unquestionable right to claim special consideration. If other industries are of comparable importance in peace and in war they should certainly receive identical treatment, but the Chamber questions whether there is any other industry which can be regarded as of such vital importance to British survival as shipping or requires to invest such huge sums in capital equipment of such rapid obsolescence. Certainly no other major industry could long survive without shipping.

Sales of Ships Abroad

The Chamber has found itself still critical of the Government's attitude with regard to the sale of ships abroad. Repeated applications have been made to the Government to lift the ban completely, but even today permission has still to be obtained before a ship less than 15 years old can be sold abroad.

The restrictions were originally introduced for wartime purposes; their continuance in peacetime has had, and continues to have, a most damaging effect on the replacement, maintenance and modernisation of the British merchant marine. British shipyards have built, and are building, hundreds of thousands of tons of shipping for export to foreign countries; but British shipowners can only sell their ships abroad under restriction. The latest types of aircraft can be exported, the Government permits the sale abroad of an aircraft carrier, a cruiser, 14 destroyers, 32 frigates and 10 motor torpedo boats, but shipowners are still denied complete freedom of action to conduct their industry in the way they know best.

The Parliamentary Secretary to the Ministry of Transport, in the House of Lords debate on shipping, made the remarkable assertion that the relaxation of the Government's control on the sale of ships abroad had enabled shipowners to get rid of obsolescent ships while the market was favourable. It is regrettable that the Parliamentary Secretary should have so misunderstood the position. Shipowners have stated again and again that by the time the Government had partially relaxed its ban on the sale of ships abroad, the market for secondhand ships at good prices had largely disappeared.

It is true that recently the market has shown a substantial upward trend, but it must be pointed out that, had the restriction been removed earlier, the faster ships which would have been ordered then would now be in commission, and, equally shipowners would be able to benefit from the higher prices now ruling for secondhand ships.

The setting up of the European Payments Union was a welcome step towards a further return to multilateralism and complete liberalisation of trade among the member countries of the Organisation for European Economic Cooperation. Broadly, the idea behind the arrangement is that the currencies of the participants in E.P.U. should be freely transferable. British shipping is affected in one or two important directions. In future the plea that foreign currency (in terms of E.P.U. countries) is not available will not be a valid excuse for discrimination by the employment of national flag ships. Another effect of the setting up of the Union is that British shipowners are now free to undertake shiprepairs in Belgium and Western Germany.

The same degree of freedom has not, however, been reached in the field of "visible" transactions. Here, member countries are aiming at liberalisation in respect of at least 75 per cent of their trade on private account by February 1, 1951. One of the effects of this limitation is that shipowners are still not free to build ships in Western Germany and there is unfortunately no indication as to when shipbuilding will be included among the operations which are to be considered liberalised.

The gravity of the international situation is indicated by the creation of the North Atlantic Planning Board for Ocean Shipping. The shipping industry is not directly represented on this Board, but it is being kept fully informed of the broad outlines on which planning is proceeding. A welcome step has been the revival of defence courses by the Admiralty for Merchant Navy masters, officers, and men. Closer liaison between the Royal and Merchant Navies has also been encouraged by a scheme whereby officers of the Royal Navy do short attachments to the Merchant Navy. At first only a few companies were invited to participate in the scheme, but now its scope is being gradually expanded.

So far the efforts of the industry to secure a reduction in Suez Canal dues have not been successful, although there is hope that a concession may be forthcoming before long. Through the General Council of British Shipping renewed representations were made to the Canal Company after the announcement in June that an increased dividend was to be paid. British shipowners, as the largest users of the Canal, took the initiative in making fresh representations to the company; a number of other maritime countries who use the Canal have made their own individual applications for a lowering of the transit dues.

Several questions of maritime law have been under consideration by the appropriate bodies—on which the Chamber is represented. The two principal matters were a proposal for a uniform through bill of lading, and limitation of shipowners' liability under the "Gold" Clause of the Hague Rules. In the case of the former, it was held, on examination, that the proposal was impracticable. An agreement on the limitation of shipowners' liability was successfully concluded and came into effect on August 1.

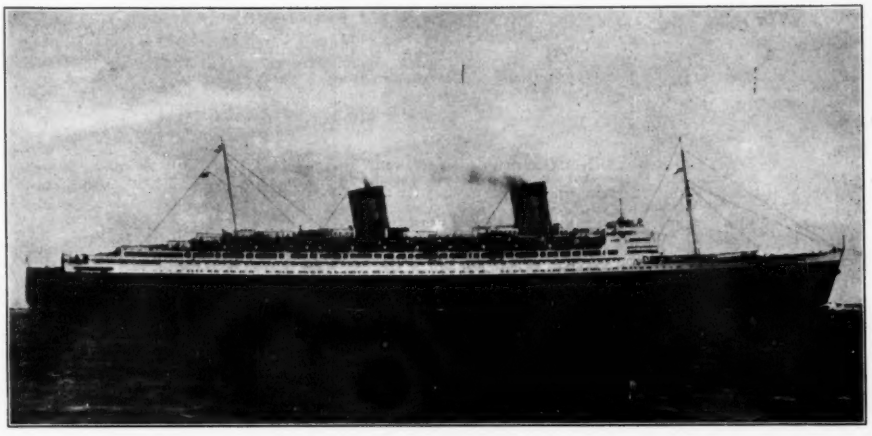
There has been a recrudescence of the troublesome and irritating delays caused by the Egyptian Government restrictions on shipping passing through the Suez Canal. The Chamber has made the strongest possible protests against these actions which are contrary to international usage, and an interference with international trade and shipping. Several other maritime powers have similarly lodged protests with the Egyptian Goverment. The subject was also discussed at the meeting of the International Chamber of Shipping and a resolution condemning the practices was carried unanimously.

German and Japanese Competition

Competition from Germany and Japan, once they were allowed to resume operations in shipping, was a foregone conclusion. British shipowners have never taken the view that these countries should be prohibited for all time from operating their own shipping services, but they have urged that as these two countries were mainly responsible for the sinking of so many Allied, and particularly British, ships, their return to merchant sea power should be gradual and that the nations which had suffered most from their war activities should be given ample opportunity to recover from their losses and re-establish themselves firmly in their former trades. But the decisions, no doubt dictated by political considerations, to permit Germany and Japan to re-start their shipping industries have been made, and the new position brought about must be faced boldly. The consequences of the decisions are already being experienced in overtonnage by Germany in the short-sea trades and the entry of Japan into shipping routes from which she was previously banned, and the pressure which is being exercised for an increase in her whaling activities

JOHN BROWN

& Company Limited



Cunard White Star Liner "Queen Elizabeth"

The works of Messrs. JOHN BROWN & CO., LTD., at CLYDEBANK, are well equipped for the construction of Passenger Liners and Cargo Vessels, Cross Channel Steamers, Oil Tankers, Reciprocating Machinery, Geared Steam Turbines and Diesel Engines; also Gas and Water Turbines, Pressure Vessels and Equipment for the Petroleum Industry

CLYDEBANK
ENGINEERING AND SHIPBUILDING WORKS:
CLYDEBANK, near GLASGOW.

Registered Office: Atlas Works, Sheffield. **Telephone No: Clydebank 2020 (10 lines)**

London Office:
8, The Sanctuary, Westminster, S.W.1.

Telegraphic Address:
Shipyard Clydebank

with the

Clarke, Chapman
ELECTRIC CARGO WINCH and Derrick Topping Unit

The combination of the Clarke, Chapman self-contained, watertight, totally enclosed Electric Cargo Winch and Derrick Topping Unit goes far towards solving the problem of reducing the time spent on cargo handling in Port.

The Winch is designed to operate with speed and efficiency even under the most extreme climatic conditions. Maximum loads can be hoisted and lowered at a speed of 100 f.p.m. and light hook returned at 450 f.p.m.

The job of hoisting, lowering, slewing and fixing of derricks is greatly simplified and accelerated when the Derrick Topping Unit is fitted. The need for manhandling the derricks is entirely eliminated.

The operation of the Topping Unit is fully described in our Publication 206.

CLARKE, CHAPMAN & COMPANY LIMITED · VICTORIA WORKS · GATESHEAD-ON-TYNE, 8
Telephone: Gateshead 72271 (10 lines) · Telegrams: "Cyclops", Gateshead
LONDON OFFICE: 112/113 Fenchurch Street, London, E.C.3 · Telephone: Royal 2737 8 · Telegrams: "Cyclops", Fen, London

Fast **PASSENGER & CARGO SHIPS**
to 6,000 tons, by **THORNYCROFT**

4,000-ton, 20-knot Passenger & Cargo Ship for the Khedivial Mail Line

JOHN I. THORNYCROFT & CO. LIMITED, WOOLSTON WORKS, SOUTHAMPTON
Shipbuilders · Marine Engineers · Ship Repairers

by the addition to her fleet of two more floating factories.

United Kingdom Merchant Fleet

The restoration of the U.K. fleet to a more balanced condition by the replacement of the older and obsolete vessels remains one of the serious problems facing the industry, and no easy or swift solution is possible. The importance of its solution is such, however, that it demands not only a long-sustained effort by the industry itself, but also a fuller appreciation outside the industry of the need to remove some of the present obstacles. The preponderance of tanker tonnage in replacement programmes is one of the striking features of the present picture of the U.K. merchant fleet.

This growth in volume and importance of the tanker section of the industry is one on which those associated with the industry are to be heartily congratulated, but it serves at the same time to draw attention to a new inclination of balance in the U.K. mercantile marine. Shipbuilders, through the Shipbuilding Committee, have expressed some concern at the state of affairs as it affects shipyards.

Matters of mutual interest to shipowners and shipbuilders have continued to be discussed as appropriate through the medium of the Shipbuilding Committee of the General Council of British Shipping. Unfortunately, shipbuilding and shiprepairing costs continue to rise and increasing calls are likely to be made on all industries associated with shipbuilding by the rearmament programme. It is also a matter of disappointment that hopes which were expressed earlier in the year that it might be possible to return to the fixed price basis of contracts now show no hope of immediate realisation.

The cost of bunkers, whether oil or coal, is a principal item in voyage costs, and any upward tendency must necessarily give rise to concern. All descriptions of oil bunkers have risen in price, but supplies have so far been readily available. In contrast the general level of coal prices has been unchanged, but there has been continuing difficulty about supplies, and shipowners have been asked to draw their bunker requirements whenever possible from outside the United Kingdom. The Government's decision to reduce coal supplies for bunkers and for bunker depots overseas meant that a substantial amount of cargo-carrying capacity was wasted. It is unfortunately the fact that the situation shows no sign of improvement in the immediate future.

Ports Policy

The overriding consideration which has actuated the whole policy of shipowners with regard to ports has been the desire to secure the best and most up-to-date port facilities consistent with economical efficiency. The industry has sought to cooperate to the fullest extent with the British Transport Commission and the Docks and Inland Waterways Executive, but has been disturbed by what appears to be a tendency in the preparation of "harbour schemes" to favour central control in port administration and to underrate the expert views of the actual users of the ports. There is a danger that port administration may become more a subject of controversy than of cooperation.

Turnround in Ports

Delays in ports throughout the world remain one of the major items in increased operating costs. Slow turnround of expensive modern ships is a waste of transport at a time when this can be ill afforded in the national interest. In particular cases, liner companies have had to put surcharges on their rates to try to meet the extra costs. Tramp shipowners tend to avoid these ports where restrictive or discriminatory practices, or "slow-motion" work, hold up loading and discharging. These seem to be the only means by which shipowners can to some extent protect themselves.

As far as U.K. ports are concerned—and, let it be said, although not the best they certainly are not the worst—the limitation on capital development and on reconstruction has undoubtedly hampered their progress towards increased efficiency. As pointed out in the Report of the British Transport Commission for 1948, the Commission owns and controls no less than 30 per cent of the port facilities of Great Britain. In the view of the shipping industry the Commission would best serve the interests of the nation in general and shipowners in particular by concentrating upon securing the maximum efficiency at those ports. The improved competitive ability of the Commission ports is more likely to promote efficiency at other ports than any extension of the British Transport Commission's ownership and control of ports.

Pilotage, although seldom given prominence in the yearly reviews of the work of the Chamber, continues to require constant attention. It has been increasingly evident both to shipowners and pilots that the method normally adopted by the Ministry of Transport for assessing the level of pilots' earnings is unsatisfactory.

Negotiations between representatives of the shipowners' and pilots' organisations, which are still in progress, have so far failed to produce a solution to the problem. Meanwhile it is understood that the Ministry proposes to modify its method of assessment in order to take into account post-war earnings of pilots. It is the view of the Chamber that any satisfactory settlement must have regard to comparable earnings in the sea service.

Deep Sea Tramp Section

During the year the interest of the section was centred mainly on the deliberations of the Deep Sea Tramp Co-operative (1950) Committee which, under the chairmanship of Mr. H. G. Mann, met frequently to study and revise the 1945 Co-operative Pool Scheme, and to consider how best and at what stage the co-operation oif other interests could be secured.

The Committee completed its discussions towards the end of the year, and in November its report and a revised scheme entitled "The Tonnage Stabilisation Scheme" were submitted to the full section. It was generally agreed that the scheme provided a basis for cooperation among deep-sea tramp owners and a postal vote confirmed the section's support of the Committee's recommendation that an Association be immediately formed on the lines envisaged in the scheme. The formation of this Association will not of itself commit the industry to the launching of the scheme. This will be a separate and distinct decision for the section to take at a later date as circumstances may warrant.

Oil Tanker Section

The continuing expansion of the world demand for oil, to which the Korean conflict and unsettled political conditions have contributed, has resulted in a strong demand for tanker tonnage, a demand which shows no sign of slackening. There has been a firmness in tanker freights and such encouragement to the building of tankers that for the first time in history there is over one million tons of tanker tonnage over 1,000 g.r.t. under construction in British shipbuilding yards, of which nearly one-half will ultimately be added to the British register. Concurrently with the expansion of tonnage there has been an extension of the range of ownership, which has been encouraged by the willingness of the oil marketing companies to time-charter vessels for long periods to supplement their own fleets.

The consideration given by the tramp tanker section in 1949 to the desirability of reviving the International Tramp Tanker Pool led to the decision that the Pool should be so far revived that the administrative machinery should be put into working order for use at any time circumstances might make it necessary. Accordingly, with the requisite measure of agreement from foreign tramp tanker interests, the International Tanker Owners' Association was called together and its Council is now in process of reconstruction. While not questioning the soundness of this decision, the section is glad to be able to report that the sustained world demand for oil and the complementary world requirement of tanker tonnage make it improbable that a tanker pool will be required in the near future.

The Intermediate Tramp section expressed its profound disappointment with the negative reply received from the Board of Trade to representations which were designed to improve the small proportion of British carryings of U.K. timber imports from the Baltic and Scandinavia. Throughout the season, terms of charter

in the Baltic timber trade were unsatisfactory; rates of freight were unduly depressed and there were periods when suitable British timber carrying ships were laid up. It is, however, encouraging to note that reported fixtures for a 7 months' period in the middle of the year showed about 23 per cent of the timber imported by the U.K. from the Baltic to Scandinavia was carried in British tonnage, compared with 11½ per cent for a 9 months' period in 1949.

With the return to private buying of sawnwood from Finland and Sweden at the end of 1950, negotiations were reopened with the Timber Trade Federation of the United Kingdom in a further endeavour to improve the charter terms in this trade, which have, for so many years, been a discouragement to British shipowners. It is satisfactory to record that an understanding was quickly reached with the Federation, in marked contrast to the complete failure of earlier discussions with the Board of Trade and its Timber Control.

The solution of the main problem, that of providing for fixed-time counting provisions and demurrage, has required mutual understanding on the part of the Chamber and the Federation of the other's difficulties. In particular, the Federations pointed out that while prepared to agree in principle that the shipowner must have some protection against undue detention in port, equally the purchaser of timber must know in advance the cost of his timber and could not be subjected to the risk of unknown demurrage liability. The agreement provides that receivers of sawnwood shipped under the new Baltwood charterparty will, in addition to the freight, pay a fixed premium per standard in liquidation of any demurrage liability. The payments so made will be placed to a central fund from which the shipowner's claim for demurrage will be met. The Timber Trade Federation prefers to leave the administration of the fund to the shipping industry, for which purpose a special Association is in process of formation. It is hoped that the Association will be formed and the new charterparty completed in time for the coming Baltic timber season.

Short Sea Liner Section

In common with all other branches of the industry, British liner companies operating in the short-sea trades, between the United Kingdom and the Continent, have had to meet substantially increased operating costs during the year. The Standing Committee has kept the situation under review, with a view to recommending to the various conferences increases in tariff rates. Intensified competition in these trades has, hitherto, made such a course undesirable, but in view of continuing rises in costs, some increase may have to be made in the near future.

The marked revival of German shipping activities in the short-sea trade has become a matter of much concern. The German lines have increased their sailings beyond trade requirements, in certain instances up to prewar strength, while British lines, which are not only anxious fully to re-establish but to extend such services, have been unable to do so because insufficiency of cargo offering would make more than limited sailings uneconomic. These developments suggest that the competitive ability of German shipping is being bolstered up by measures of financial assistance of one kind or another against which losses can be offset.

British lines have also noted that their German competitors have a large replacement programme in hand, and some of the new ships already on the berth are of a type which, according to British standards, would have been both expensive to build and to operate. While the necessity for the economic rehabilitation of Germany is recognised, there does seem to be a case for reviewing the development and activities of German shipping in relation to the funds which are being made available to Germany for shipping purposes. It certainly could not have been intended (if this should prove to be the case) that German shipowners should be put in an advantageous competitive position with tonnage of British or other flags.

Coasting Sections

The general increase in railway rates in May went some way towards restoring the competitive equilibrium between coastwise shipping and the railways, but notwithstanding the activities of the Coastal Shipping Advisory Committee and the Conferences established between the two Sections of coastwise shipping and the nationalised internal transport services, little progress has been made in the adjustment of those unduly low "exceptional" railway rates which have been a source of damage to coastwise shipping for many years. The substantial deficit incurred by British Railways during the first two years of its operation supports the contention that coastwise shipping is subjected to uneconomic competition from the railways. Until this situation is firmly tackled, the future of an important section of the coasting trade must remain hazardous.

In the long-term the introduction of the comprehensive Charges Scheme under the Transport Act for Rail and Road Transport, in the framing of which coastwise shipping is to be consulted, may be the means of establishing fairer competitive conditions. Should this prove to be the case, there seems no need for pessimism as to the future of coastwise shipping for, notwithstanding rising costs, it will, in its sphere, still be the most economical form of transport. The urgent problem, therefore, is how to secure fair competitive conditions during the further transitional period pending the introduction of a satisfactory comprehensive Charges Scheme.

Freight Equalisation Scheme

For the Coasting Liner Section the outstanding event was the termination of the Freight Equalisation Scheme on June 30. This scheme has never been regarded as more than a temporary palliative designed to secure the survival of essential coasting liner services during the further period of uneconomic competition from rail and road transport. The coasting liner industry was enabled to dispense with the assistance it afforded, mainly because of the increase of 16⅔ per cent in the general level of railway freight charges which came into operation on May 15. The termination of the scheme involved some risks but the Section was anxious that the assistance should be dispensed with as soon as possible and considered that it should not be opposed. It should be recorded that the industry has been grateful to the Ministry of Transport for the far-sighted policy which brought the scheme into operation in 1946 and enabled it to continue for nearly 3½ years, during which railway rates, influenced to some extent by long distance road haulage rates, remained at a wholly uneconomic level. As to the future, the section is somewhat alarmed by the continuing rise in operating costs. In its relations with internal transport it advocates a policy of the fullest cooperation and looks to the Conference machinery and the Coastal Shipping Advisory Committee as the media through which such cooperation will best be achieved.

On the coast, though not in the short-sea trades, tramp freight rates for Government and Government-sponsored cargoes are still controlled by the Ministry of Transport. This is due to the continued existence of the Coal Freight Refund Scheme which, however, during the year has been radically altered and much reduced. Furthermore, the scope and cost of this scheme are being progressively reduced still further, and according to present intention it is to be terminated in September 1951.

Unfortunately for the smaller ships, the inadequate increase in railway rates was more than offset by reductions in the assistance to merchants previously received through the medium of the coal scheme, thus aggravating the competitive position. The larger vessels, although not so susceptible to competition from internal transport, have also been subject to the continued control of freight rates and have tended to be influenced into the short sea trades. In the light of this situation, the work of the section has been mainly concerned with freight rate matters.

The continuing expansion of tonnage owned by or under construction for the nationalised public utility undertakings has not been an encouragement to coasting owners to place orders for new tonnage. The strategic and commercial implications of this growth in the ownership and operation of coasting colliers by the utility undertakings have been the subject of discussion with the Ministry of Transport. The section

(*Continued on page* 207)

YUGOSLAVIA'S MERCHANT FLEET

RAPID EXPANSION OF SEABORNE TRADE

By E. A. BELL

THE motorship *Slovenija*, the latest addition to the Yugoslav merchant fleet, left Amsterdam on her maiden voyage bound for the United States in the middle of January. The *Slovenija*, built at Amsterdam, is a somewhat bigger version of her sister vessels *Makedonija* and *Srbija*, mentioned in THE SHIPPING WORLD of May 31 last. With a length of 432 ft. 11½ in. the vessel has a deadweight capacity of 9,000 tons, and her engines of 6,950 h.p. develop a loaded speed of 16 knots. Her nine holds are served by 16 electrically operated derricks. The fourth vessel of this series, the *Crna Gora*, is to be delivered by the same Amsterdam yard early in the summer.

Including the *Slovenija*, the Yugoslav merchant fleet at the end of 1950 comprised 43 ocean-going vessels totalling about 292,000 tons gross; including 11 motor vessels of 60,224 tons gross, and 32 steamships of 231,375 tons gross. This compares with a grand total of 150,759 tons gross at the end of 1948. Additions made in the past two years include the motorships *Rijeka*, *Pula* and *Zadar*, sister ships of about 3,900 tons d.w. each, all built at the Hardinxveld shipyard at Rotterdam; and the motorships *Zagreb*, *Skopje*, *Sarajevo* and *Titograd* (mentioned in the article referred to above) of 4,000 tons d.w. each, all sister ships built at the Treci-Maj shipyard at Rijeka. There is also the 7,000-tons vessel *Vojvodina*, the ex-Roumanian *Baltchik*, which, used during the war by the Italian Navy, sank off the Dalmatian coast, and was salved after the war. Her reconstruction at the Vicko Krstulovic shipyard at Split is nearing completion. A 4,200-tons vessel is at present being reconstructed at the Treci-Maj yard, Rijeka. This ship, likewise sunk during the war (off Rijeka) was salved in 1950. Three more vessels of the same type are under construction at the same yard. The first of this series is to be named *Treci Maj*. This series of four is subsequently to be expanded to six units. In addition to two vessels of 4,000 tons d.w. each, ordered from a Norwegian yard, two ships of 4,100 tons d.w. each were recently ordered from a shipyard in Western Germany.

State Tramp Shipping

All these vessels have been, or are to be, added to the fleet of the Jugoslavenska Linijska Plovidba, the most important of the four Yugoslav State shipping concerns. For the Jugoslavenska Slobodna Plovidba (Tramp Shipping Concern) the British steamship *Lord Glentoran* (formerly of the Ulster Steamship Co., Ltd.), a vessel of 5,667 tons gross and 8,833 tons d.w., was acquired in the past summer. Renamed *Kosmaj II*, she is a replacement for the *Kosmaj*, 4,438 tons gross, which, carrying linseed from Argentina to the U.K., caught fire and had to be abandoned as a total loss in the first half of 1950. A similar fire, on the same route and likewise concerning a load of linseed, broke out in July last in the *Korcula* (5,150 tons gross) but was got under control in the Bay of Biscay. Yugoslav seamen have a special sentimental attachment for the *Korcula* because it was this ship (then known as *Senga*) which, interned by the Italians in the port of Gallipoli (Italy), hoisted the new Yugoslav flag with the five-pointed star for the first time in 1944.

Though considerably increased in recent years, Yugoslav merchant tonnage is far from sufficient for the country's requirements. In 1939, the Yugoslav merchant fleet totalled 397,627 tons gross, of which some 60,000 tons comprised the coasting fleet. All which was left when the war ended in 1945 was (expressed in terms of tonnage) 20 per cent of the coasting fleet and 30 per cent of the ocean-going fleet (16 ocean-going vessels). The expansion of the fleet in recent years is illustrated in the following table:—

YUGOSLAVIA'S MERCHANT FLEET

At end of	Ocean-going (1)	Ocean-going (2)	Coasting (1)	Coasting (2)	Total (1)	Total (2)
1946	28	115,784	37	15,831	65	131,615
1947	32	137,473	49	24,247	81	161,720
1948	35	150,749	68	30,569	103	181,318
1949	39	170,839	72	32,076	111	202,915

(1) Units of more than 100 tons gross.
(2) Tons gross.

Furthermore, at the end of 1949 there were 470 vessels of less than 100 tons gross, exclusive of 11,000 fishing vessels and 137 service craft (floating cranes, salvage ships, etc.).

Seaborne Trade

The extraordinary expansion of the Yugoslav maritime trade since the country's Western reorientation in the second half of 1948 has caused the share of the Yugoslav merchant fleet in seaborne imports and exports to drop considerably, despite the growth of Yugoslav tonnage. In 1947, when the country, trading prevalently with the East, was mostly relying on overland routes and only to a comparatively small extent on maritime connections, the share of the Yugoslav fleet in the country's seaborne trade was 63 per cent, the balance being accounted for by foreign flags. The complete change in Yugoslavia's foreign trade since then has brought about a reversal of the position. In 1949, the share of the Yugoslav fleet was 36 per cent, the foreign share 64 per cent. This metamorphosis will be better understood in the light of the following particulars illustrating the expansion of Yugoslav seaborne trade in recent years.

	Seaborne Imports	Seaborne Exports
	Freight tons	
1946	537,119	401,282
1947	360,609	1,406,058
1948	548,886	1,530,830
1949	921,050	2,046,110

In addition, in 1948 there was a certain amount of transit traffic through the port of Rijeka for and from Czeckoslovakia and Hungary, aggregating 162,644 freight tons. Between 1946 and 1949 seaborne imports expanded by more than 71 per cent, but seaborne exports showed a spectacular increase by about 400 per cent in the same period of time. The contraction of imports in 1947 was due to the cessation of UNRRA deliveries. The expansion of Yugoslav merchant tonnage could not keep pace with that of the country's seaborne trade. Hence the growth in the share of the foreign tonnage. This development has been accentuated since greater imports of foodstuffs became necessary as a result of the bad crop in 1950 brought on by prolonged drought.

Expanding Coastal Trade

Coastal trade, too, showed considerable expansion, from 2,096,378 freight tons in 1946 to 2,184,634 tons in 1947, 2,753,169 tons in 1948, and 2,883,640 tons in 1949. Between 1946 and 1949 the number of passengers on coastal lines nearly doubled from 4,304,291 to 8,281,882. The Yugoslav coast and islands have some 269 ports (including harbours and anchorages) but only five are of importance for the foreign trade. The list is headed by Rijeka; and Split, Dalmatia's main port, Sibenik, to the north of Split, Dubrovnik, in southern Dalmatia, and Kardeljevo (formerly Ploce) are the four others. The latter, at the mouth of the Neretva into the Adriatic Sea, is rapidly developing into the main port for Bosnia and Herzegovina. Its importance will be enhanced once the conversion to standard-gauge of the Sarajevo-Mostar-Ploce narrow-gauge railway, now in hand, is completed, together with the electrification of the line.

The following table illustrates the development of

the seaborne traffic by ports in recent years:—

Ports	Seaborne Traffic (freight tons) 1946	1948	1949	Increase 1946-49 per cent
Rijeka	622,651	1,659,361	2,179,298	250
Split	692,314	807,491	989,210	43
Dubrovnik	237,931	255,273	274,043	15
Sibenik	190,114	167,021	302,898	59
Kardeljevo	147,749	157,024	140,257	—
All others	1,144,110	1,949,359	2,065,744	80
	3,034,779	4,995,529	5,951,450	96

The extraordinary expansion at Rijeka has been due not only to the favourable geographical position of that port in respect of its hinterland but also, to a great extent, to the progress made in the reconstruction of the port and its installations after the havoc wrought by the Germans before their retreat in May 1945, when 90 per cent of the port facilities were blown up. In 1939, Rijeka—then the Italian port of Fiume and as such in an unfavourable geographical position in respect of the Italian peninsula—recorded a seaborne goods turnover of only 952,422 tons. The best year in the port's existence before the Second World War, 1913, when Fiume was Hungary's only maritime port, showed a turnover of 2,097,000 tons, a total which was exceeded in 1949. The main export product going through Rijeka is timber. A total of 7,432 vessels entered Rijeka in 1949; of these, 6,658 (including coastal vessels) were Yugoslav (and, in decreasing order), 358 Italian, 209 (including coastal vessels) under the flag of Trieste, while British vessels, 54 units, came fourth, exceeding the U.S.A. total by one.

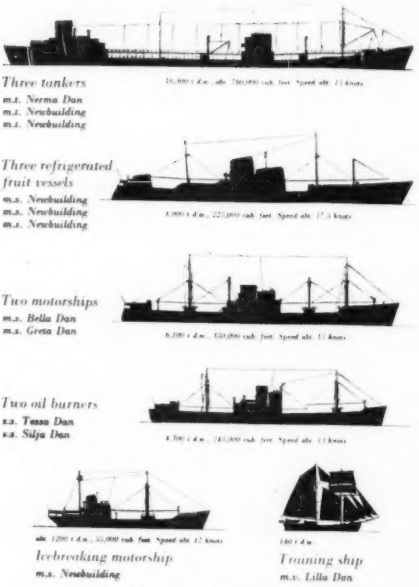
Modernisation of Coastal Fleet

Particular attention is being paid to the expansion and modernisation of the coasting fleet. Of six motor vessels of the *Opatija* class, with accommodation for 500 passengers each, and having a speed of 15 knots, four are building at the Uljanik shipyard at Pula. Four diesel-engined vessels, somewhat larger than the *Opatija* type, are to be taken in hand at the same yard during 1951. Their speed will be 16 knots, as they are to operate on the express lines along the Dalmatian coast. Also in 1951, 12 smaller vessels, 650 tons each, and having a speed of 10 knots, for the short services between the mainland and islands, are to be laid down at the Treci-Maj yard in the course of the current year. In addition, four motor tankers of 500 tons d.w. each, for the supply of oil to coastal points, and six motor tankers of 450 tons each for the supply of drinking water, mostly to islands where water reserves usually dry up during long periods of drought, are to be built, also at Rijeka. The steamship *Prestolonaslednik Petar*, once a crack vessel (British-built) of the Yugoslav coasting fleet, mined and sunk of Zlarin (near Sibenik) in 1941, was salved from a depth of more than 150 ft. during 1950, and is at present being reconstructed at the Vicko Krstulovic yard at Split. Under her new name of *Partizanka II*, she is to enter service in 1952. The former *Partizanka* (ex-*City of Lisbon*), acquired after the war and the largest passenger vessel (6,209 tons gross) in the Yugoslav merchant fleet, was so badly damaged by fire in 1949 that it was decided not to reconstruct her. She has been broken up.

An agreement for the improvement of the economic relations between Yugoslavia and Italy, signed at Rome on December 23, 1950, has brought also the solution of the long-drawn out problem of the restitution by Italy to Yugoslavia of four Yugoslav vessels seized by Italy during the war.

"Baltic" Amateur Performance

An interesting performance is planned by the Baltic Amateur Dramatic & Operatic Society for its spring production at the Scala Theatre, Charlotte Street, London, W.1, on the evenings of March 14 to 17 at 7.15 p.m. The musical play chosen is *Wildflower*, by Harbach and Hammerstein, which was produced in London in 1926 but has not attracted a great deal of attention from amateur societies. The producer has been given permission to bring the show right up to date and additional musical numbers and lyrics by the the musical director and members of the Society will be introduced.



New building for J. Lauritzen, 1950-53

This illustration in a recent issue of *J. L. News* shows the variety and extent of the current shipbuilding programme of the J. Lauritzen Lines, Copenhagen

Seafarers' Health Proposals

Health and welfare conditions still existing among seamen are a threat to maritime nations as well as to the seamen themselves, according to Dr. Karl Evang, Director-General of the Norwegian Health Service. Prompt international action under the joint auspices of the World Health Organisation and the International Labour Organisation is needed if only to meet the serious problem of contagion, according to Dr. Evang in an article in the *International Labour Review*, published by the I.L.O.

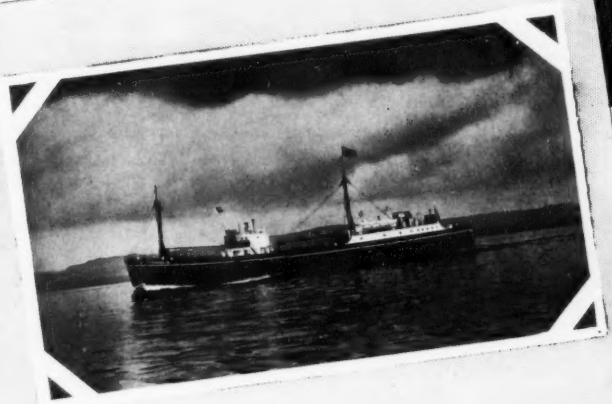
Dr. Evang finds that almost every port is subject to the visits of seamen suffering from tuberculosis, smallpox, venereal disease and other illnesses. A modest outlay for an international health service would be rewarding in lessening the danger of infection to persons ashore. From the seamen's point of view there is a corresponding need for adequate hospital facilities, staffed with competent doctors and surmounting language barriers. Living and welfare facilities ashore are another consideration. Too often seamen are faced with a lack of decent accommodation and no access to recreation or sports.

Dr. Evang claims that the time has come seriously to consider the creation of an international health service for seafarers in all major ports. He suggests three possible methods for bringing this about:

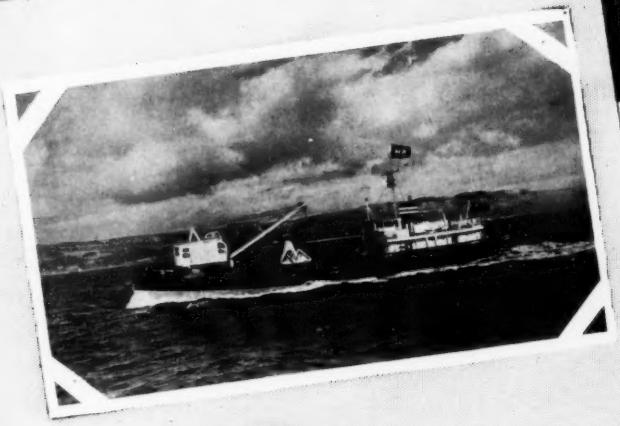
1. By extending the Brussels agreement of 1924 to cover the treatment of diseases other than venereal disease;
2. By establishing international medical offices through cooperation between the Governments of the maritime countries concerned, under the auspices of WHO and ILO;
3. By establishing international medical offices through cooperation between shipping interests.

The Bank of London & South America, Ltd., in its *Fortnightly* Review, reports that the Argentine Ministry of Transport has announced that ships in port which are unable to load and unload cargo owing to strikes or other stoppages of work shall not in future be required to pay port dues. The shipping agents, however, must obtain immediately from the Prefectura General Marítima (Port Authority) a certificate showing that the vessel was unable to operate through lack of hands. The certificate must then be presented to the Dirección Nacional de Puertos (National Ports Board).

Henry Robb Ltd.



M.V. "Hirondelle", built for the General Steam Navigation Company for near-Continental trade.



Grab Hopper Dredger, specially designed for the Manchester Ship Canal.

BUILDERS OF HIGH-CLASS *Passenger* AND *Cargo* SHIPS;
ALSO ALL TYPES OF SPECIAL SERVICE CRAFT.
Facilities for repairs and installation of machinery.

Victoria Shipyards, Leith, Scotland

Telegrams: "Repairers," Leith. Telephone: Leith 36881-4
LONDON OFFICE: 49, LEADENHALL STREET, LONDON, E.C.3. Telephone: Royal 4364

Telegrams Antwerp : DEKEYSER Telephone : Antwerp 33.78.10

AGENCE MARITIME DE KEYSER THORNTON S.A.

ESTABLISHED OVER 100 YEARS

Shipbrokers, Steamship and Regular Liner Agents

ANTWERP

14, Longue rue de l' Hôpital

ASSOCIATED COMPANIES :

E. THORNTON & SON, LTD
28, Baldwin Street,
BRISTOL

DE KEYSER EXPEDITIONS S.A.
(*Forwarding*)
14, Lg. rue de l' Hôpital
ANTWERP

A. M. DE KEYSER THORNTON S.A.
11, Place d'Armes,
GHENT

VOYAGES DE KEYSER THORNTON S.A.
(*Passenger & Travel*)
Shell Building, 53, Canterstoen
BRUSSELS

REPAIR SERVICE ON THE MERSEY

CRICHTON'S

FOR ALL WORK ON SHIPS

C. & H. CRICHTON LTD.
4-10, DERBY ROAD,
LIVERPOOL

Telegrams
"CRITON, LIVERPOOL"

Telephone
NORTH 2531-2-3-4

"SUN" TUGS *for Thames, Coastal and Sea Towage*

S.T. "SUN XVII."

LARGE FLEET OF POWERFUL TUGS . . .

Fitted with Fire-Monitors, and Powerful Pumps for Fire, Salvage and Oil Bunkering. Steam supplied to vessels

. . . FOR ALL PURPOSES

Tugs fitted with W/T, R/T, V.H.F. and D/F

Telephone Service between Thames Tug Station and Coast.

Telephone Nos :
City Office - - ROYal 1328/9 & 3355
Wapping Office - ROYal 6921/4 & 5325/6
*King George V Dk. Office - Alb. Dk. 2278/9
*Gravesend Office - GRAVESEND 4231/2
**Available for Night and Sunday use.*
Telegrams and Radio Telegrams
"Skiffs Phone London"

W. H. J. ALEXANDER, LTD.

44, Leadenhall St., E.C.3. *And at* Wapping, London, E.1

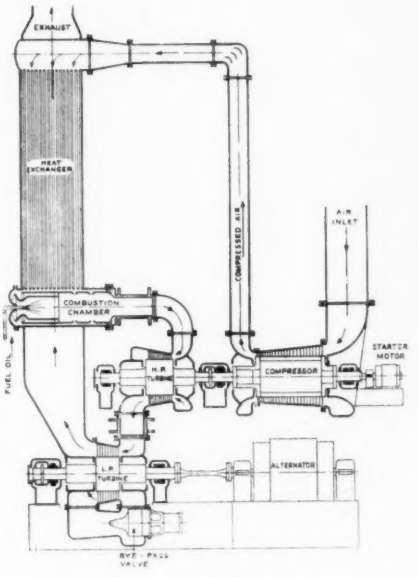
THE B.T.H. GAS TURBINE

TESTS ON THE FIRST GAS TURBINE FOR A MERCHANT SHIP

THE FIRST gas turbine to be constructed for installation in a merchant vessel was demonstrated last week before dismantling for installation in the diesel-electric oil tanker *Auris*. Ordered and designed primarily in order to obtain experience with the operation of a gas turbine installation under actual service conditions on board ship, this gas turbine has been constructed by the British Thomson-Houston Co., Ltd., Rugby, whose experience of gas turbine design and development dates as far back as 1933. The design of the gas-turbine driven alternator unit has been governed to an appreciable extent by the limitations of space in the engineroom of the tanker *Auris*, in which the unit is to be installed. As the engineroom conditions limited the width of the set, a vertical compound unit was necessary which, as can be seen in the accompanying diagram, does not lend itself to ease of inspection or maintenance of the L.P. turbine, and this arrangement also restricts heat recovery in the heat exchanger.

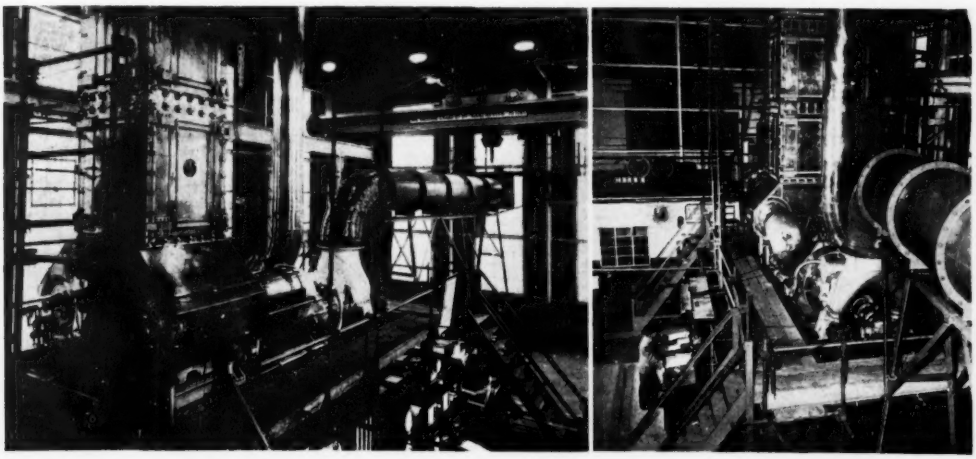
Some indication of the far-sightedness of the owners of the *Auris*, the Anglo-Saxon Petroleum Co., Ltd., and the extent to which preparations have been made for the research and development of the gas turbine, can be gathered from the fact that the tanker *Auris* was designed, constructed and engined to facilitate the installation and subsequent testing of the experimental gas turbine. This was, in fact, a wartime idea of Mr. John Lamb, manager of the Research and Development Division of the Shell Petroleum Company. The *Auris* was also designed to operate on alternating current, power being supplied from four diesel-driven alternators. As reported in THE SHIPPING WORLD of May 5, 1948, when the vessel ran trials, the propelling machinery comprises four Hawthorn-Sulzer diesel engines each coupled to an alternator supplying current to the propulsion motor and to the propulsion auxiliaries. Each of the diesels develops 1,100 b.h.p. at 375 r.p.m. and is coupled to a 830-kVA alternator. The current is three-phase, 50 cycles at 1,600 volts. One of the diesel engines is to be replaced within the next two months with the B.T.H. gas turbine.

It will be appreciated that the machinery installation in the *Auris* is an ideal arrangement for testing a gas turbine, since the propulsion of the vessel is not dependent only on the gas turbine, so that in the event of any trouble or failure, the vessel can maintain almost her normal service speed on only the three diesel-driven alternators. A safety device which is incorporated in the unit, but which is also a starting accessory, is the provision of a by-pass valve through which

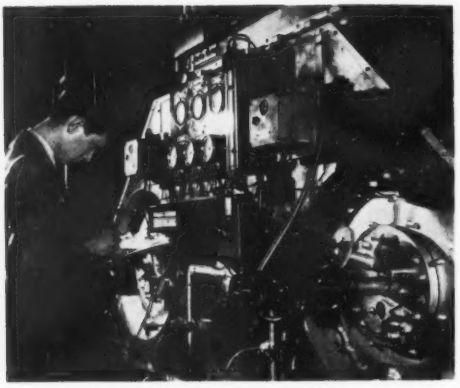


Diagrammatic layout of BTH gas turbine set

gas may pass direct from the high pressure turbine exhaust to the atmosphere. This valve serves two functions. As a safety device, it opens if the speed of either turbine shaft should reach trip speed, and shuts off the fuel simultaneously, thus preventing overload of the alternator shaft in the event of the failure of the electrical load. Secondly, as an accessory for starting, the valve can be kept open during the starting period so that the pressure behind the H.P. turbine is reduced. The H.P. turbine will then assist in driving the



The BTH gas turbine alternator set for the "Auris" on test, showing (*right*) **high-pressure turbine and compressor unit**

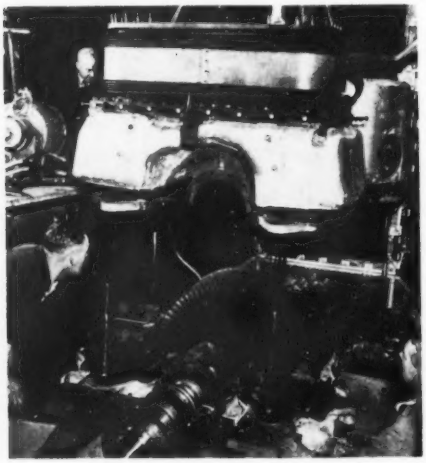


Combustion chambers and temperature gauge board

compressor at starting speeds, so that the power demand and the time required for starting are both reduced.

The arrangement of the gas turbine unit is shown in the accompanying scheme, which is self-explanatory. The output is given as 1,200 b.h.p. at the low-pressure turbine coupling or 860 kW at the alternator terminals. The fuel consumption was estimated at 850 lb. per hour, which corresponds to 0.7 lb./b.h.p./hr. and an overall thermal efficiency of 20 per cent. The set was designed for an ambient air temperature of 68 deg. F. and a turbine inlet temperature of 1,160 deg. F., the maximum permissible operating temperature being 1,200 deg. F. (649 deg. C.). The design speed is 5,750 r.p.m. for the compressor/H.P. turbine shaft, 3,000 r.p.m. for the L.P. turbine-alternator shaft.

Testing of the gas turbine was started on June 26, 1950, and from that date until December 22, the set was operated for a total of 124 hours on gas oil. Of this time, 46 hours were on light load (one-quarter load or less) and 78 hours were on higher loads. The various runs during this period were undertaken to establish the soundness of the mechanical construction, to obtain preliminary performance figures for the set, and to establish good combustion at all loads. In addition, investigations were carried out regarding casing distortions, and adjustments made to running clearances in both H.P. and L.P. turbines. An analysis of the noise from the set was also made. Of the experience gained during running, the following points are of general interest:—



Low-pressure turbine with top half of casing raised

Prior to testing the set, both combustion chambers had been adjusted on the test-rig operating at atmospheric pressure to give good, smoke-free combustion over the estimated range of air/fuel ratio from idling to full load. When the set was first started up the exhaust was smoky, and it was eventually established that there is an appreciable difference between operation of a combustion chamber under pressure, and at atmospheric pressure with equivalent air and fuel flow. The combustion chambers had, therefore, to be finally adjusted on the set. After operating for 25 hours, a routine mechanical check revealed a slight distortion of the H.P. turbine casing. Similar exact checks after another 62 hours' running established the fact that no further distortion had occurred. The running clearances were thus unimpaired. When operating on gas oil with unsatisfactory combustion, i.e., smoky exhaust, there was a fine deposit of soot on the heat-exchanger tubes, but no deposit at all on the turbine blading.

Performance and Endurance Tests

Performance and endurance tests were carried out from January 1 to February 9, 1951. During this period the set was operated for a total period of 528 hours; 193 hours on gas oil, and 335 hours on heavy oil having a viscosity of 1,500 secs. Red. No. 1 at 100 deg. F. The set has thus, to date, been running for a total time of 652 hours. The operation on gas oil included a continuous performance test of 100 hours' duration. Operation on heavy oil included a number of short runs totalling 65 hours to obtain good combustion, and a continuous run of 270 hours, mainly at full load.

The maximum-load run, on January 25, 1951, was made in connection with alternator tests. This period of running did not allow steady heat-exchanger temperatures to be reached. The no-load consumption is about 100 lb./hr. with the L.P. turbine idling at 1,500 r.p.m., and about 200 lb./hr. at 3,000 r.p.m.

Although the turbine inlet temperature at full load is about 50 deg. F. lower than the design temperature the fuel consumption is about 10 per cent less than the expected figure. The overall efficiency of the gas turbine is given as 21.4 on fuel oil of a heat value of 18,300 B.Th.U./lb.

In appraising the performance of the set as a whole it should be realised that the equipment went on test "as designed"—i.e., no changes in design had been made. Thus, as the tests show, neither the compressor nor the H.P. turbine are running at their best points. Moreover, a heat exchanger with a low heat recovery—having a thermal ratio of 50 to 52 per cent only—is installed, and the turbine inlet temperature is lower than the maximum permissible for a set of this type. It is of particular interest to note that although no air filter is fitted at the inlet to the compressor, no falling off in the compressor efficiency has ensued after 565 hours running since the blading was cleaned.

RECENT PUBLICATIONS

The World Rebuilt, by Peter Howard (Blandford Press, 2s. 6d.) relates how one of the organisers of recent dock strikes in London altered his views when he heard about Moral Re-Armament.

The current edition of *Sabroe News*, issued by Thomas Ths. Sabroe & Co., Ltd., Aarhus, tells the story of the Danish ocean research ship *Galathea*, whose refrigeration requirements were attended to by this firm.

The Report of the Committee set up by the Board of Trade to consider the Organisation and Constitution of the British Standards Institution has now been published by H.M.S.O. (1s.). The report states that industry increasingly recognises the economic importance of standardisation and regards it as "self-evident that an expansion of the B.S.I. is urgently necessary."

A Readers' Guide to books on Transport is the latest in a series of select bibliographies published by the County Libraries Section of the Library Association. Copies are generally obtainable free from any County or Municipal Library, but can also be purchased for 4d. from the Publications Secretary, County Library, County Hall, Trent Bridge, Nottingham.

IMPORTS by sea into the port of Rotterdam in 1950 amounted to 17,057,958 tons (1949: 12,556,774 tons; 1938: 24,503,894 tons) of which 6,462,692 tons (4,291,617; 17,500,266) was in transit. Exports by sea totalled 11,885,366 tons (8,186,343; 17,867,096) of which 7,253,568 tons (5,491,296; 14,849,049) were transit goods.

MARINE AIR CONDITIONING

A SURVEY OF CURRENT PRACTICE

By W. H. GLASS*

[*This paper first considers the method of measuring environmental temperature and the effect of temperature and humidity on comfort. It is pointed out that a very dry heat is rarely experienced in ships. Methods of cooling and dehumidification are discussed and the effects shown on psychrometric charts. The types of equipment suitable for marine use are then described, primarily with reference to installation for use in tropical waters.*]

THE unit air conditioning system involves the use of a number of air conditioning units each complete in itself and incorporating refrigerating compressor, condenser, and an evaporator used as the air cooler, together with air circulating fan, filters and, if necessary, an air heater. The conventional unit for land use has an air-cooled condenser, which is normally arranged to draw in and discharge the condenser cooling air through a window or other opening against which the unit is installed. A fan recirculates the air of the room over the evaporator and discharges the cooled air into the room. Provision is usually made to draw in a proportion of fresh air. It has been proposed to apply this type of unit to ships, but its application is limited as it is seldom possible to have direct access to outside air in way of the unit. In the United States the manufacture of these units has reached the stage of assembly line production, and while they are limited to capacities of $\frac{3}{4}$ to $1\frac{1}{2}$ tons refrigeration, their cost per ton of refrigeration is attractive. The provision of condenser cooling air and fresh air supply, however, would involve more air trunks and fan power than for a conventional ventilating system, while the problem of drainage of the condensate from a multiplicity of small units adds to difficulty of applying unit air conditioners to ships' accommodation.

It is sometimes thought that cooling can be carried out by one of these conditioners merely placed in the space, the condenser cooling air being drawn from the space. It will be appreciated, however, that any cooling done by the evaporator in the unit would be more than neutralised by the heating of the circulated condenser cooling air. Special marine-type unit air conditioners are, however, regularly applied to such spaces as hospitals, the units being specially designed with water-cooled condensers and air circulating fans of ample power to overcome the resistance of any duct work necessary.

Central Unit System

The arrangement of refrigerating plant and air conditioning unit at one point and the delivery of conditioned air by trunks to the individual spaces offers the advantage of concentration of machinery and reduces to a minimum interference with the spaces served, except so far as the air ducts are concerned. In this respect this system is analogous to the plenum system as applied to heating of large buildings and just as subdivision, variety of purpose and limitations for the accommodation of ducts have developed a compromise for heating and ventilating in buildings, so also the most suitable system for air conditioning in ships follows the same pattern. In other words, the tendency is to split up the ship installation into a number of small central systems arranged according to ship compartments and nature of space, each unit being closely associated with the space served with a view to limiting the distributing duct work to a minimum.

In both mercantile and naval work it is the present practice to design and install air conditioning units so that, when required, they may also function as ordinary ventilating units, having a fresh air capacity equal to full fan capacity. This ensures that should the refrigerating plant fail, the accommodation will at least have the service of a high-capacity ventilating system, while, apart from this emergency, there are many periods during a voyage when neither heating nor cooling is necessary. Normally when heating or cooling, the amount of fresh air necessary for hygienic purposes will be only 20 to 30 per cent of the total air necessary to deal with the heating or cooling duty and fresh air inlet trunks might therefore be reduced in size accordingly. Such an arrangement would, however, necessitate the use of refrigeration over periods during which it would be unnecessary with full scale fresh air ventilation.

A system based on the use of minimum fresh air has been introduced in large buildings in the United States and has also been applied to passenger accommodation. In this system each room is fitted with one or more small cooling units designed to deal with the sensible heat load of the space in which it is situated, that is to say, any cooling of the air of the room is carried out with a surface temperature of the cooling coils above the dew point in the room, so that no condensation takes place. A central plant with a comparatively high pressure system of distributing air ducts delivers the appropriate quantity of fresh air to each room, this air having been cooled to the dew point consistent with the desired humidity in the rooms, due allowance being made for the pick-up of moisture from the occupants. The central plant is in effect a central air conditioning unit dealing only with the fresh air load, and in this function is unaffected by any heat pick-up in the long duct runs existing in a large building, since the sensible cooling load is handled by the small unit coolers in the rooms. The advantage in reduction of the size of the air duct is evident, but this is offset by the fact that chilled-water pipes must be led through all the rooms or spaces served.

Refrigeration for Air Conditioning

Refrigerating plant in no way differs from that used for ships' insulated spaces and is mainly of the compression type, using reciprocating compressors. The refrigerants in use are carbon dioxide, methyl chloride or Freon 12. On the American continent Freon 11 is used with centrifugal compressors for large plants, but has not been used much in this country. Water is the refrigerant with steam-jet vacuum plants. Ammonia, which is a very useful refrigerant for industrial purposes, is ruled out in air conditioning work on account of the danger arising should leakage occur.

Freon 12 is regarded as the best refrigerant available for compressor type plants, having thermodynamic properties equal to methyl chloride and being equally safe as carbon dioxide except that should the gas become decomposed by intense heat, poisonous products are produced. It is non-corrosive to ordinary materials, but is expensive as compared with methyl chloride and carbon dioxide. until recent years it was imported from the United States and dollar scarcity made its supply difficult. It is now manufactured in this country under the trade name "Arcton."

The steam-jet vacuum type of refrigerating machine has special advantages in marine work and is frequently used in large installations. Unsuitable for low temperatures and requiring about three times the condenser cooling water of the compressor-type plant, its electrical load, nevertheless, is small, being only that necessary for the pumps, and the condenser cooling water may be had for the cost of the pumping. In one instance at least a steam-jet plant has been used for providing chilled water for air conditioning, and at the same time cooling the liquid line of a CO_2 refrigerating plant serving the ship's insulated chambers.

Air Distribution

The problem of air distribution in air conditioning installations involves consideration of the same factors as ordinary ventilating or Thermotank systems. Trunking layout has always been a difficult problem in ship work, particularly in decorated spaces. It is at once an art and a science, an art in scheming and devising leads that will satisfy the naval architect and the decorator, and a science in designing the sometimes tortuous runs of air ducts so that the required air volumes will be delivered at the appointed spot. Close collaboration between the naval architect, the decorator and the ventilating engineer is a necessity; a collaboration involving compromise and due appreciation of individual difficulties. The limitations of space in marine work naturally calls for higher air velocities in ducts than normally used in land installations, and it is also in marine work that the development of high-velocity air inlets has been most pronounced. It is now about 28 years since the original high-velocity air inlet, the punkah louvre, was introduced and, despite its many critics, its application has progressively extended.

Where refrigeration is not associated with ventilation there is as yet no convenient alternative to the punkah louvre type of air terminal for vessels which may ply tropical waters. In the author's experience there have been many instances wherein the fear of discomfort from draughts

* Abstracts from a paper read by Mr. W. H. Glass, of Thermotank, Ltd., before the Institution of Engineers & Shipbuilders in Scotland on February 6, 1951.

has induced the specification of a draughtless system involving the use of diffusing-type air terminals, but one passage with a following wind and air temperatures in the nineties has been sufficient to reverse the requirement. With ordinary ventilation in these conditions the only criticism is that there is not sufficient draught from the louvres.

Where, however, an air conditioning installation ensures that comfortable temperatures can at all times be maintained and there is, therefore, no necessity to seek relief from direct draughts it is the practice to adopt air distributors of the diffusing type, or where air jets of high velocity are used to arrange these in such a manner that the air streams are not directed on the occupants. The virtues of jet ventilation are becoming generally appreciated, in that the higher pressure behind the outlets makes for a more even distribution along the air duct and the turbulence around the air jet ensures a thorough mixing of the incoming air with the atmosphere of the room.

Insulation

It is the natural tendency for air conditioning engineers to request that walls, ceilings, etc., should be effectively insulated against heat leakage. No job was ever spoiled by having too much insulation and it is always possible to indicate the actual saving in B.Th.U. per hr. as a result of the insulation. There is, of course, whether insulating against cold or heat, an economic side to this question. The leakage load in a heating installation may be due to a difference of temperature inside and outside of 40-50 deg. F. and the saving correspondingly greater than that due to the 10 or 15 deg. difference likely to exist on a cooling scheme. The problem is whether it is cheaper to pay for the insulation or pay for the additional refrigeration.

On a normal size of ship's installation the additional cost per B.Th.U. per hr. increase would be of the order of 2d. or 3d., and the addition of 2 in. of cork might reduce the leakage by about 6 B.Th.U. per sq. ft. per hr. with a prevailing temperature difference of 15 deg. It is unlikely this insulation could be applied for a cost of 1s. 6d. per sq. ft. There are, however, conditions arising where the effect of the sun must be considered and the saving would be five or six times that given in the above example. In other words, insulation is really economic where solar heat is encountered or wherein association with machinery spaces introduces a hazard that must be met with adequate insulation.

Insulation may be necessary on air trunks, apart altogether from the question of heat leakage, as instances may arise where the actual heat leakage is negligible, but the nuisance of condensation must be avoided. It is for this reason primarily that the air conditioning units and cold air supply ducts must be effectively insulated where they have an ambient atmosphere of hot humid air. One requirement of the insulation applied to a cold surface in a hot atmosphere is that it should be impervious to moisture. Should material such as hair felt or sprayed asbestos be applied, the vapour in the atmosphere will penetrate the material and condense on the cold surface. On weather decks or ships' sides the insulated surface will be at a higher temperature than the room during hot weather, involving no danger of condensation, but when in cold areas, when the interior is at a higher temperature than the outside atmosphere, condensation in porous insulation will occur should the internal humidity be sufficiently high. For this reason all insulation applied to surfaces that may be colder than the inside atmosphere should be sealed against the penetration of vapour by a coating of cement or other covering impervious to vapour.

Forty-seven years ago the late Mr. A. W. Stewart included an air cooler fed with ship's cold brine in a Thermotank installation in the *Kumano Maru*, probably the earliest effort in comfort cooling on board ship. From the hesitant and reluctant expenditure in application of comfort cooling to first-class dining saloons only, a growing appetite, or passenger pressure, has made cooling a normal standard for all public rooms in many lines, and cabin accommodation is rapidly being included. The crews of tugs and dredgers operating in the tropics reject a life in sweaty heat and indulge in the comfort of air-conditioned cabins; living conditions must be made bearable if the personnel are to be retained. There is, as in all fields, an economic limit, but as owners now accept with equanimity refrigerating loads of 400 tons where 20 years ago one-tenth of this load was viewed with concern, we may assume that the economic limit has not been reached.

Lighting in the "Queen Mary"

When the Cunard liner *Queen Mary* recently underwent a refit at Southampton she was fitted with a new cocktail bar for cabin-class passengers. A feature of the "Mermaid Bar" is the lighting installation, which was supplied by The British Thomson-Houston Co., Ltd., at short notice. The style chosen was the Mazda ship-lighting fitting of the standard design S10113. This type has a polished silver bronze framework and satin-finished glass dish. It has an overall diameter of 17 in. and a depth of 5 in., and houses three 60-watts Mazda tungsten filament lamps. The fittings are arranged in a regular pattern in two lines running the length of the bar, giving a pleasing and evenly distributed light of about 8 to 10 lumens per sq. ft. overall. The contractors for the installation were G. T. Rackstraw, Ltd., of Worcester

New Marine Lacquer

A recent product of interest to the boatbuilding industry is a clear lacquer, which is highly resistant to brine and sea water. Designed for use over all types of paint systems (except tar and bitumen), it has unusually effective abrasion resistant and moisture proofing qualities and can be applied direct to untreated timber in lieu of normal boat varnish. The dried film is non-inflammable, extremely tough and flexible. It can be applied by brush or spray and is touch-dry within an hour of application. Full details of "Tretol" marine lacquer can be obtained from Tretol, Ltd., 12/14 North End Road, London, N.W.11.

Production of Zirconium

The production of zirconium metal on a commercial scale has recently been initiated by Murex, Ltd., of Rainham, Essex. Previously only limited supplies were available in England and even now full production has not yet been attained. Sheets down to 0.005 in. thick, 6 or 7 in. wide and 2 or 3 ft. in length are now being made, and it is expected that sheets up to 12 to 15 in. wide will be available in a few months. Rods down to 2 mm. diameter can be supplied and drawn zirconium wire may also shortly be available. Zirconium has excellent resistance to corrosion, which makes it suitable for use in chemical plant. It also has exceptionally good "getter" properties, which will tend to make its use in electronics widespread.

New Direct Thrust Air Hammers

In addition to the production of the pistol-grip lightweight air hammers, type PH107 and PH108, the Hymatic Engineering Co., Ltd., of Redditch, Worcs., has now developed and produced two further models, which in this case have spade-type grips. The new models, the PH113 and PH114, have been specially designed to cope with construction or maintenance work where long periods of continuous operation may be involved. It is claimed that tests have shown that worker-fatigue in work of this nature is reduced when the new hammer is employed as it ensures that the wrist of the operator is directly in line with the thrust of the blow. Of simple but robust design, the new hammers have only one moving part. The new quick-acting positive tool retention afforded by the patented spring and octagonal chuck enables the tools to be changed with the minimum of delay and adjustments.

ROUND THE SHIPYARDS

Work in Progress in Northern Ireland

By THE SHIPPING WORLD'S Own Correspondent

A BUMPER crop of orders for the Belfast yards of Harland & Wolff, Ltd., has been reaped within the past few weeks. The list is headed by a contract of outstanding significance, that for a liner of 28,000 tons placed by the P. & O. Steam Navigation Co., Ltd., and also includes three oil tankers. The liner is not only the first P. & O. ship which the builders have received for the Belfast yards since 1923, when they launched the *Mooltan* and *Maloja*, but the first of her size secured since the Union-Castle vessels *Edinburgh Castle* and *Pretoria Castle* were ordered at the end of the war. The fact that the building of first-class passenger tonnage is to be resumed is therefore of great importance to the Queen's Island, which has long been making do with cargo liners and oil tankers, with only occasional intermediate liners to give a larger degree of employment in the white trades.

As the P. & O. Company has taken the plunge by ordering two new ships of this class (the other will be built by John Brown) there are some hopes that other liner owners will now follow suit. While prices remain very high the matter of replacements for obsolete vessels becomes increasingly urgent.

More Tanker Orders

The three oil tankers which have also been booked will also serve to give variety to the programme since, strangely enough, none of the 15 or 16 ships commissioned last year were of this type. Two form part of the series of 21 ships ordered by the British Tanker Co., Ltd., namely, one turbine-driven vessel of 32,000 tons d.w., which will be the largest of her kind ever built in the port, and a motorship of 14,000 tons. Harland & Wolff, Ltd., who are already building the *British Skill* (28,000 tons d.w.) at Belfast, have also participated in the company's new building programme in other ways. Two motor-driven ships of 14,000 tons have been allocated to the Govan yard and the firm will also be responsible for the diesel engines of two more ships of 16,000 tons d.w. to be laid down at Birkenhead and on the Tees. Harland-B. & W. engines, to be constructed under licence by John G. Kincaid & Co., Ltd., will also be fitted in three ships distributed to yards on the Clyde.

The remaining oil tanker order is for a ship of 12,000 tons d.w. for unnamed owners. This contract was announced by Sir Frederick Rebbeck, chairman and managing director, at the launch of the tanker *Orkdal* (12,000 tons d.w.) at Belfast on February 8. This vessel is for Moltzau & Christensen, Oslo, and is the eleventh ship which the firm has launched for Norway since the war. At present it is building a high proportion of the Norwegian tonnage in British yards. Sir Frederick Rebbeck also disclosed that the *Orkdal* is the 69th oil tanker of 12,000 tons d.w. built by the firm.

The aircraft carrier *Eagle* has now left Belfast for Liverpool, where she has entered the Gladstone Dock before performing her trials. The completion of this very large ship has necessitated the paying off of a considerable number of men in the fitting out trades. Adjustments have also been made in consequence of the fact that, owing to the lag in the ordering of ships two years ago, there are not at present many fitting out. At the same time, the slipways are now well filled and conditions will shortly become more normal. Other work in the port comprises the modernisation of the Railway Executive's motorship *Duke of York*, the conversion to oil burning of the Ulster Steamship Company's *Torr Head*, and the overhaul of the cross-channel passenger ship *Royal Scotsman*.

New Cross-Channel Motorship

An order for a new Irish cross-channel composite vessel has been placed by Coast Lines, Ltd., with Harland & Wolff, Ltd., Belfast. Dimensions will be about 320 ft. in length by 50 ft. beam. She will be propelled by twin screws, driven by the latest Burmeister and Wain two-cycle single-acting trunk type diesels, giving a service speed of 17 knots. Particularly noteworthy in the specification for the greater comfort of passengers is the inclusion of Denny-Brown stabilisers. Sleeping accommodation for 246 first-class passengers will be provided in single and two-berth cabins. There will also be a number of cabins de luxe. The third-class sleeping accommodation will provide berthing for 150 passengers. An innovation will be the provision for the individual control of both temperature and ventilation in cabins and public rooms. The vessel will be equipped with the most modern navigational aids. Wireless equipment will enable passengers to obtain ship-to-shore contact throughout passages. Crew's accommodation will be situated amidships above main deck level and will be of the highest standard.

BRITISH SHIPPING IN 1950-51

(*Continued from page* 200)

is still actively considering the best means of reaching an understanding.

Towards the end of the year the coal situation and the severe weather, which affected the supply of railway wagons, raised some question as to the adequacy of coastwise shipping to maintain deliveries of coal for both industrial and domestic purposes. This emphasised once again the importance of maintaining in the national interest efficient and adequate coastwise shipping services and drew attention to the fact that coasters, like other shipping sections, suffer the full impact of the poor rate of turnround and not least in the coal trade.

Whaler Section

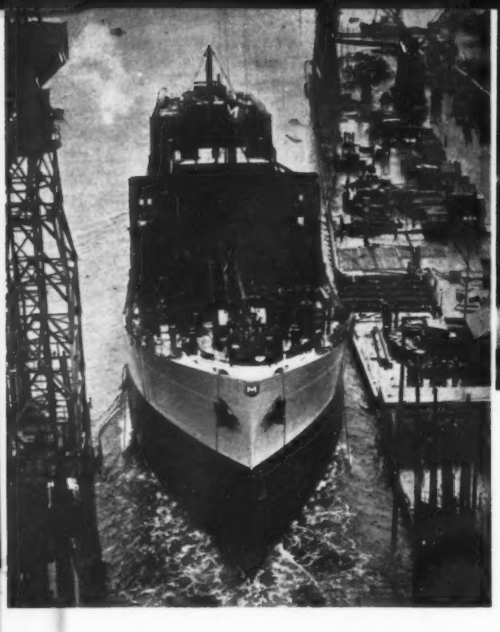
The production achieved in the 1949/50 season was good and the British expeditions again showed results which compared favourably with those of other nations. The pelagic whaling season has been altered from December 15 to April 1 to December 22 to April 7—subject in each case to the limitation of catch to 16,000 blue whale units. In fact, the 1948/49 operations were terminated 6 days and the 1949/50 operations 23 days prior to the conclusion of the open season. It is clear that the same catch could have been made more economically by a smaller number of vessels, with a consequential saving both in material and manpower. This justified the section in regretting an increase (from 18 to 19) in the number of expeditions for 1950/51 as the result of the conversion for whaling of a fleet of U.S.A. vessels. It is believed that the expedition is largely German manned. The concern of the section has been sharpened by reports that the Japanese are again pressing for permission to increase their whaling potential by the addition to their fleet of two more floating factories. Further representations have been made to H.M. Government emphasising the fact that any further floating factories can only result in diminished and more costly production by existing expeditions.

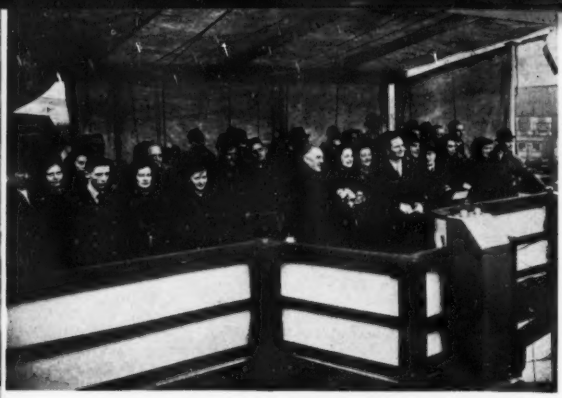
It has also been necessary to bring to the notice of H.M. Government the position created by the transfer to the Panamanian flag of a floating factory registered (before conversion) under the U.S.A. flag. Whereas the other contracting Governments were given to understand that the Panamanian Government had ratified the International Whaling Convention, 1946, it appears that in fact it has not done so. Endeavours are being made to get Panama to ratify the Convention but should these efforts not be successful this expedition could be operated without international supervision and without its catch counting towards the total blue whale unit quota.

The same question also arises in the case of a floating factory building for an Argentine whaling company.

Tonnage Measurement

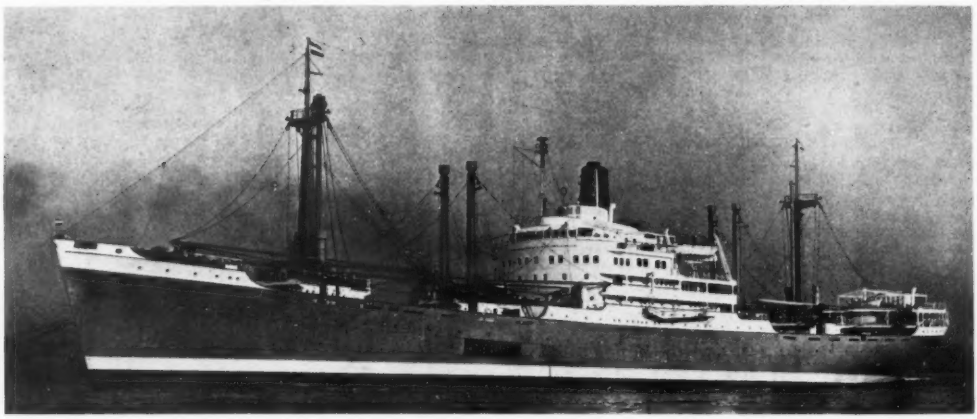
Progress has been made towards securing an adjustment of the present unsatisfactory scale of propelling power allowances. A proposal has been formulated by the Committee established by the Institution of Naval Architects on which the General Council of British Shipping was represented. Through the Institution, the Minister of Transport has been asked to receive a deputation with the object of securing the early adoption of the proposal.





Launch of Motor Tanker " Orkdal "

The second launch of the year from the Belfast yard of Harland & Wolff, Ltd., was that of the single-screw motor tanker *Orkdal*, which took place on February 8. The *Orkdal*, a vessel of some 8,200 tons gross, is being built to the order of Moltzau & Christensen, of Oslo. Included in the picture of the launch party above are Mrs. Ragnar Moltzau, who performed the naming ceremony, Mr. Ragnar Moltzau and Mr. R. C. R. Christensen, managing directors of the shipowners, Mrs. Christensen, Sir Frederick E. Rebbeck, chairman and managing director of Harland & Wolff, Ltd., and Lady Rebbeck. When completed the *Orkdal* will have a deadweight of 12,000 tons and will be propelled by a 6-cylinder four-stroke single-acting B. & W. type diesel engine supplied by the shipbuilders. She has dimensions of about 487 ft. 6 in. length o.a., 460 ft. b.p., 59 ft. breadth moulded and 34 ft. 10 in. depth moulded



Cargo Liners " Ampenan " and " Manchester Merchant "

A cargo and passenger liner of about 9,500 tons gross, the single-screw steamer *Ampenan* (*above*) has been built by the Rotterdamsche Droogdok Maatschappij N.V., Rotterdam, for the N.V. Koninklijke Rotterdamsche Lloyd, of Rotterdam. With a deadweight capacity of 12,200 tons, she has dimensions of 497.9 ft. length, 66.7 ft. breadth and 35.8 ft. depth. The propelling machinery has been supplied by the General Electric Company of America, and comprises two steam turbines double-reduction geared to a single shaft. A total of 8,500 h.p. is developed by the main engines. Built by the Blythswood Shipbuilding Co., Ltd., the single-screw turbine-driven cargo vessel *Manchester Merchant* (*below*) has been delivered to her owners, Manchester Liners, Ltd. She is a vessel of some 5,800 tons gross, with a total deadweight of about 9,790 tons. Her principal dimensions are 440 ft. length, 59 ft. breadth and 38 ft. 4 in. depth. Intended for the owners' special North Atlantic trade, she has two complete decks, long bridge and forecastle. There are 14 cargo winches fitted for the rapid handling of the cargo, while in the tween-decks there is arranged refrigerated cargo space of 20,000 cu. ft. capacity. Supplied by David Rowan & Co., Ltd., the propelling machinery consists of one set of single-reduction geared turbines of Parsons type. A mean speed of about 16½ knots was obtained on trials

NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnage: Gross	Approximate Tonnage: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Coast Lines	1	Irish cross-channel vessel	3,600	800	320 × 50 × 19	17	Tw.-scr., 2-str. B. & W. diesel	—	Shipbuilders	Harland & Wolff, Belfast
Harry Borthen & Co., A/S, Oslo	1	Tanker	—	13,500	—	—	—	—	—	Wm. Hamilton
Fearnley & Eger, Oslo	2	Tankers	—	18,000 (each)	—	—	Diesel	—	—	Chas. Connell
Furness, Withy & Co.	3	Cargo	3,340 (each)	4,600 (each)	—	14	Sin.-scr., 4-cyl. Doxford diesel	3,300	—	Burntisland S.B.
Booth S.S. Co.	1	Cargo liner	—	7,250	—	12.5	Sin.-scr., 6-cyl. 4-str. B. & W. diesel	3,300	Harland & Wolff, Belfast	Wm. Pickersgill
Sir R. Ropner & Co. (Management)	1	Cargo liner	—	9,500	—	—	Doxford diesel	—	Alex. Stephen & Sons	Caledon S.B.
Atlantic Oil Carriers (N. G. Livanos), Panama	2	Tankers*	12,500 (each)	19,500 (each)	545 b.p. × 71 × 40.5	—	Steam turbine	8,000 (each)	—	Fairfield S.B.
J. Marr & Sons.	1	Trawler	300	—	—	—	Diesel	—	—	Cochrane & Sons
Charrington, Gardner, Locket & Co.	1	Tug	66	—	—	—	Diesel	—	—	Cochrane & Sons

Commonwealth and Foreign Yards

Van Nievelt Goudriaan en Co.'s Stoomv. Maats.	1	Tanker (to be named *Sirrah*)	—	18,500	532.5 (long)	15	7-cyl., 2-str. Stork diesel	7,500	—	Nederlandsche Dok en Scheeps. Amsterdam
Kon. Rotterdamsche Lloyd	1	Cargo	—	10,500	—	—	Diesel	—	—	Howaldtswerke A.G., Hamburg
Vereenigde Nederlandsche Scheepv.	1	Cargo	—	12,000	—	16.5	Steam turbine	—	—	Howaldtswerke A.G., Hamburg
U.S.S.R	2	Tankers	—	—	—	—	—	—	—	Norrkopings Varv & Verksted
Ford Motor Co., Dearborn, Mich.	1	Ore carrier	—	19,000	—	—	—	—	—	Great Lakes Eng. Works
Bethlehem Steel Co.	2	Great Lakes ore carriers	—	—	—	—	—	—	—	Bethlehem Sparrows Point
"Antartide" Soc. per Azioni, Palermo	1	Whale oil refinery	21,000	24,000	639 b.p. × 82 × 61.66	—	Tw.-scr. diesel	10,850	—	Cant. Riuniti dell'Adriatico, Monfalcone
A/S D/S Mathilda, Bergen	1	Tanker	—	16,250	—	14.5	7-cyl., 2-str. M.A.N. diesel	6,300	—	Uddevallavarvet
Pipeline Tankers, Toronto	1	Great Lakes tanker	—	—	—	—	—	—	—	Collingwood Shipyards
Canadian Govt.	1	Car, cargo and pass. ferry	—	—	—	—	—	—	—	Canadian Vickers, Montreal
U.S. Maritime Administration	25	"Mariner" class cargo	—	12,500 (each)	525 b.p. × 76 × 29.66 (draught)	20	Steam	—	—	Newport News S.B. & D.D. Co.; Ingalls S.B. Corp; Bethlehem Sparrows Point; Bethlehem Steel Co., Quincy; Sun. S.B. & D.D. Co., (5 vessels each)
Norwegian owners	1	Cargo liner	—	10,000	—	—	Diesel	—	—	Howaldtswerke A.G., Kiel

* Additional particulars of contracts previously reported as being placed by unknown owners.

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnage: Gross	Approximate Tonnage: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
Feb. 7	Kessock Ferry (Joint Committee)	*Eilean Deibh* (375)	Pass. and car ferry	100	—	—	—	Tw.-scr. Gleniffer diesel	160	—	Jas. Lamont & Co.
Feb. 8	Union S.S. Co. of N.Z.	*Waimate* (398)	Cargo	3,500	5,170	325 b.p. × 50 × 27	12	Sin.-scr., two 8-cyl. diesels and sin.-red. gearing	—	British Polar Engines	Henry Robb

TRIAL TRIPS

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnage: Gross	Approximate Tonnage: Deadweight	Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
—	A/S Vore (Gunstein Stray & Son), Farsund	*Annavore*	Refrig. cargo	750	871	—	13.5	Sin.-scr., 8-cyl., 2-str. diesel	—	Crossley Bros.	Kristiansands M.V
—	United S.S. Co., Copenhagen	*Bygholm* (301)	Coaster	1,800	3,000	303.5 o.a. × 43.96 × 19.3 (dft)	13	6-cyl., 2-str. diesel	2,500	Shipbuilders	Elsinore S.B.
—	Meriviento O/Y, Helsinki	*Finntrader* (210)	Cargo	6,300	6,500	413.4 o.a. × 54.5 × 7.72	14	9-cyl. diesel	5,000	Sulzer Bros. Winterthur	N.V. Scheeps. De Hoop, Lobith
—	Damps.-Gesellschaft Neptun, Bremen	*Helios* (526)	Cargo	1,500	2,900	—	—	Diesel	—	—	Flensburger Schiffsbau Gesellschaft
Jan. 19	Jugoslavenska Linijska Plovidba	*Slovenija*	Cargo	5,800	9,000	435 b.p. × 59 × 39.46	16	Sin.-scr., 6-cyl., 2-str. diesel	6,250	Stork & Co., Hengelo	Netherlands Dock & S.B. Co.
Jan. 25	A/S Stalselfangeren Polaris, Alesund	*Polaris*	Seal catcher	435	—	101.42 o.a. × 28.08 × 14.06	11-12	M.A.N. diesel	1,200	—	A. M. Liaaens Verft, Alesund
Jan. 26	Hekman & van Baars, Dordrecht	*Fiat*	Coaster	—	470	147.7 × 25.7	10	M.A.N. diesel	300	—	"De Waal," Zaltbommel
Jan. 31	Polish Govt.	*Swiatowid* (310)	Icebreaker	500	—	145.5 × 46 × 25	—	Tr- exp steam	2,600	Elsinore S.B.	Oskarshamns Varv
Feb. —	Hamburg Amerika Linie	*Brandenburg* (443)	Cargo liner	2,800	4,950	360 × 46 × 21.33 (draught)	12	M.A.N. diesel	2,300	—	Lubecker Maschinenbau-Gesellschaft
Feb. —	Robert M. Sloman, Jnr., Hamburg	*Messina* (622)	Fruit carrier	1,500	2,200	282 × 42 × 11.33 (draught)	12	Diesel	1,600	—	Deutsche Werft, Hamburg

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

THE LINER *Georgic* has arrived at Liverpool following her temporary release to The Cunard Steam-Ship Co., Ltd., who are chartering her for the coming season to meet the demands for passage both of visitors from North America and of emigrants to Canada. Before March 22, the date of her first North Atlantic sailing from this country, the *Georgic* will undergo overhaul and "spring cleaning," spending a portion of the next five weeks in dry dock in Liverpool. After leaving Southampton the *Georgic* will call at Havre and Cobh both west and eastbound, and each of her first four westbound voyages includes a call at Halifax, Nova Scotia.

THE Royal Netherlands Steamship Co. will open a weekly cargo service from Philadelphia to the Dutch West Indies and Venezuelan ports on February 26, with the sailing of the *Sarpedon*. Vessels will sail every Monday, and proceed to New York to complete loading. Ports of call will include La Guaira, Puerto Cabello, Guanta, Puerto Sucre, Aruba, Curacao and Maracaibo.

FOR the first time since the war Dutch shipping companies have ordered ships from a German yard, Howaldtswerke A.G., Hamburg. The Koninklijke Rotterdamse Lloyd has ordered a motor cargo ship of 10,500 tons, and the Verenigde Nederlandse Scheepvaart Maatschappij, The Hague, a 13,500-tons motor cargo ship. Both ships are to be completed in the summer of 1952.

VAN NIEVELT GOUDRIAAN & CO.'S STOOMVAART MIJ., Rotterdam, has joined the few Dutch shipping companies that operate tankers. The company has ordered its first tanker, a 18,500-tons motorship, to be built by Nederlandse Dok en Scheepsvouw Mij., Amsterdam.

THE DEATH has occurred of Mr. Rudolf Olsen, senior partner in the Norwegian shipowning firm of Fred Olsen & Co., Oslo. Mr. Olsen, who was born in 1882, was the son of the founder, Mr. Fred Olsen.

THE ADDRESS of North American Shipping & Trading Co. (London), Ltd., is now 41 Park Street, London, W.1. (Telephone: MAYfair 8400).

* * * *

THE Seafarers' Education Service is organising an exhibition, to be called "Spare Time at Sea," on board H.Q.S. *Wellington*, headquarters of the Honourable Company of Master Mariners, in May and June of this year. Exhibits will include models, handicraft, paintings, drawings, photographs and written work, all the work of seafarers and lighthouse-keepers in their leisure time. The exhibition will be opened on the occasion of the annual general meeting of the Seafarers' Education Service, at 2.45 pm., on May 24. The ceremony will be performed by Mr. C. E. Wurtzburg and Sir William Crawford Currie, president of the Seafarers' Education Service, will preside.

MR. W. LYNN NELSON, until his recent retirement chief marine superintendent of the Eagle Oil & Shipping Co., Ltd., has been awarded the Denny Gold Medal of the Institute of Marine Engineers. This award is granted annually to the author of the best paper to be read during the year by a member of the Institute. Mr. Nelson's paper, "Factors Governing the Design of a Modern Tanker, with Special Reference to Machinery," was read on March 14, 1950.

AMERICAN shipping is much better prepared and equipped to take on national emergency tasks than it was before World War II, according to Frank J. Taylor, who has been re-elected president of the American Merchant Marine Institute. Also re-elected were Mr. John W. Bancker, vice-president; Mr. R. J. Baker, secretary-treasurer; Mr. John J. Burns, general counsel; and members of the board of directors.

SIR COLIN ANDERSON has been appointed chairman of the Royal College of Art in Place of the late Sir Metford Watkins by the Minister of Education. He is a member of the Council of Industrial Design, and of the Arts Panel of the Arts Council.

* * * *

BRITISH RAILWAYS are to restore on March 1 the "Green Arrow" Registered Transits service for full wagon loads of freight traffic for export, except traffic to Ireland. The fee will be 5s. per consignment in addition to the usual carriage charges. Under this scheme a full consignment of goods is registered through to the port; every railway contact point en route receives an advance advice, by telephone or telegraph, of the consignment's passage, and a constant watch is maintained until the goods are finally delivered.

CLELANDS (SUCCESSORS), LTD., Willington Quay-on-Tyne, have commenced work on the order received some months ago for eight oil-carrying articulated barges for an African oil company. Each barge will comprise four sections. The two inside sections are box-like barges, and the other two parts are shaped like the stem and stern, respectively. If necessary, the two barges can be joined together in a double row and operated as one unit. The barges have a draught of only 5 ft., but will be able to carry 1,500 tons.

TYNE shipyards will return to the five-day week again on March 5. This system will continue until the first Monday in November, when the winter arrangements for a 5½-day week will be resumed.

THE DEATH has occurred of Mr. Leonard Vaughan Williams, secretary of C. T. Bowring & Co. (Insurance), Ltd., since 1920, and an underwriting member of Lloyd's since 1944.

THE investigation into the explosion on board the steamer *Malin Head* has been fixed for hearing in the Courts of Justice, Belfast, on March 19 at 10.30 a.m.

THE SURVEY of Australian coastal waters, suspended two years ago, will be resumed in May when a survey ship will sail for the northern waters off Australia.

STEEL PRODUCTION in January was at an annual rate of 15,907,000 tons, compared with 15,873,000 tons a year ago.

THE DEATH has occurred of Mr. John Bain, chairman of A. W. Bain & Sons, Ltd., insurance brokers.

VISCOUNT RUNCIMAN, chairman of Walter Runciman & Co., Ltd., will be installed as vice-president of the Chamber of Shipping of the United Kingdom at the annual meeting tomorrow (February 22). Viscount Runciman is chairman of Moor Line, Ltd., and a director of the Anchor Line, Ltd., Lloyds Bank, Ltd., and other companies. In 1931-32 he was chairman of the North of England Shipowners' Association and in 1940-41 Master of the Worshipful Company of Shipwrights. He was Director-General of the British Overseas Airways Corporation during 1940-43

MR. L. G. DANN, a director of Mitchell Cotts & Co., Ltd., and the retiring chairman of the London Deep Sea Tramp Shipowners' Association, has been elected vice-chairman of the association for the ensuing year. Mr. C. F. B. Arthur a director of the Bolton Steam Shipping Co., Ltd., has been elected chairman. Mr. Dann joined Mitchell Cotts & Co. in 1924 as steamship manager, and was appointed a director in 1935. He is also a director of the Saint Line, Ltd., the Sun Shipping Co., Ltd., Thesen's Steamship Co., Ltd., Cape Town, and of the Newcastle P. & I. Association

DRY DOCK OWNERS
AND
SHIP REPAIRERS

MANAGING DIRECTORS :
G. B. BAILEY, O.B.E., D.F.C.
(Chairman)
CHARLES A. WINN.

TELEGRAMS :
"BAILEY" CARDIFF
"BAILEY" BARRY
"BAILEY" NEWPORT

TELEPHONES:
CARDIFF 2971
NEWPORT 3215
BARRY 900

C. H. BAILEY LTD.

CARDIFF.
NEWPORT MON.
BARRY.

ESTD. 1832

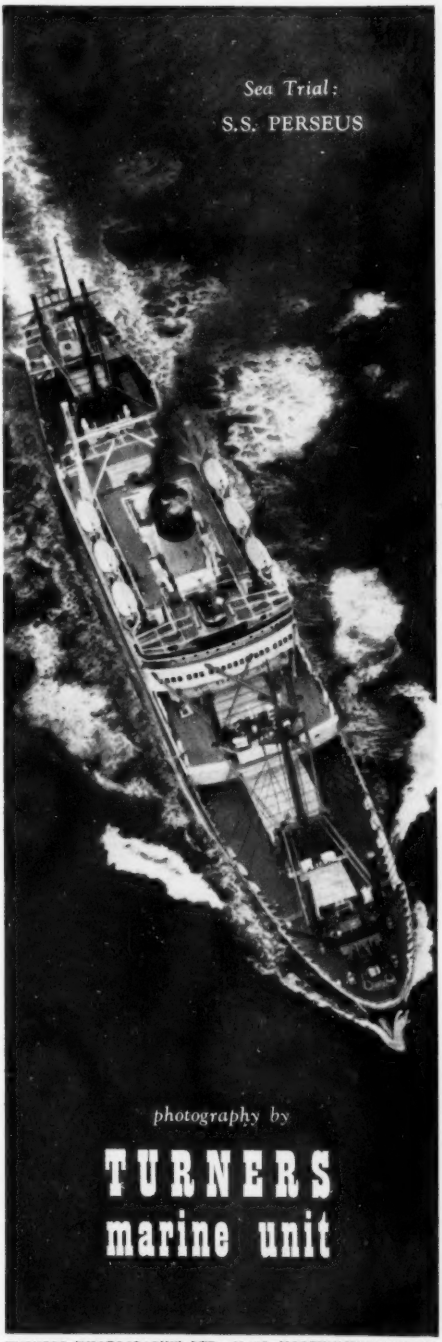
WILLIAM McGEOCH
& CO. LTD.
28, WEST CAMPBELL STREET,
GLASGOW

Manufacturers of all Ships' Electric fittings
—Designs made to Special Requirements—

Suppliers of Ships' Hardware for any class of Ship in all Metals and finishes

WARWICK WORKS,
46 Coventry Road,
Birmingham.

Telegrams :: McGEOCH, GLASGOW.
McGEOCH, BIRMINGHAM, 10



TURNERS (PHOTOGRAPHY) LTD., 99-105, NORTHUMBERLAND ST
NEWCASTLE UPON TYNE, 1. Tel: 22106 NEWCASTLE.

SHAW SAVILL LINE

To

SOUTH AFRICA

AUSTRALIA

NEW ZEALAND

HEAD OFFICE:
88, Leadenhall St., London, E.C.3

PASSENGER OFFICE:
11a, Lower Regent St., London, S.W.1

REGULAR CARGO SERVICES

Between **LONDON** and

HAMBURG	TERNEUZEN	DIEPPE
BREMEN	GHENT	HAVRE
HARLINGEN	DUNKIRK	CHARENTE
AMSTERDAM	CALAIS	BORDEAUX
ROTTERDAM	BOULOGNE	OPORTO
ANTWERP	TREPORT	MEDITERRANEAN PORTS

Between **HAMBURG** and **BRISTOL CHANNEL PORTS**
(Bristol, Cardiff, Newport, Swansea)
Between **LONDON** and **RHINE PORTS**
From **HAMBURG** and **BREMEN** to **Mediterranean Ports**
Between **SOUTHAMPTON** and **ANTWERP, ROTTERDAM, BREMEN, HAMBURG**
Coastwise Services between **LONDON** and **HULL**

The General Steam Navigation Co., Ltd.
15 Trinity Square, London, E.C.3.
Telephone : ROYal 3200

MOSS HUTCHISON LINE LTD.

REGULAR FREIGHT SERVICES FROM LIVERPOOL AND GLASGOW TO CASABLANCA AND MEDITERRANEAN PORTS. ALSO FRANCE, SPAIN AND PORTUGAL

For Freight apply to
MOSS HUTCHISON LINE LIMITED,
30 JAMES STREET, LIVERPOOL 2.

GLASGOW:
95, Bothwell Street, C.2

MANCHESTER
196 Deansgate.

LONDON
c/o THE GENERAL STEAM NAVIGATION CO. LTD.,
15, Trinity Square, E.C.3.

Plying between West Africa
the Continent & Great Britain
... the Palm Line fleet of modern cargo liners provides a frequent and reliable service for the carriage of all types of merchandise and produce.
PALM LINE
LIMITED
UNILEVER HOUSE, BLACKFRIARS, LONDON, E.C.4
AFRICA HOUSE, MERSEY ST., LIVERPOOL 1

NORTH OF ENGLAND PROTECTING, INDEMNITY & WAR RISKS ASSOCIATION

(Established 1860)

The Association covers Shipowners in –

Class I.—**PROTECTING**—Against claims for one-fourth damage done to other ships or vessels, damage to structures, loss of life, personal injury, etc.
Class II.—**INDEMNITY**—Against liabilities arising in connection with cargo, &c.
Class III—**WAR RISKS**—Hull and Machinery, &c.
Class IV—**WAR RISKS**—Freight, Disbursements, &c.

The interests of Members are safeguarded at the principal ports in the World by official Legal Representatives and Nautical Experts, who have full instructions to act and to assist Masters in the case of need.

Principal Office: **NEWCASTLE-UPON-TYNE: Collingwood Buildings**
Branch Offices : GLASGOW—134, St. Vincent St., C.2. CARDIFF—The Exchange, Mount Stuart Square. LONDON—24, St. Mary Axe, E.C.3. LIVERPOOL—123, Derby House, Exchange Buildings.

JAMES SHEARER, O.B.E., *Chairman.* J. W. TODD, *General Manager*
LESLIE MANN *Vice-Chairman.*

W. J. YARWOOD & SONS LTD.

Established 1840

SHIPBUILDERS
ENGINEERS AND
IRONFOUNDERS

THE DOCK, NORTHWICH CHESHIRE
'Grams : "Shipyard, Northwich." *'Phone :* 4234 (2 lines)

Tyne Gangway Co. Ltd.,

WALLSEND

Patent Self-levelling Step Accommodation Ladders and Shore Gangways

Tel.: No. 63657.
Telegs.: " Gangway - Wallsend.

EAGLE AVIATION LTD.

draws the attention of shipowners

to their fleet of Avro York aircraft recently increased to six in number. These aircraft are ideal for crew movements also for the transport of ships' spares.
Maximum economy - Maximum speed.

Head Office:
29 CLARGES STREET, LONDON, W.1.
Tel: GROsvenor 6411 Cable: Speedlode Audley, London.

ELLERMAN LINES

World-Wide Services

Linking

U.K. CANADA U.S.A.

with

SOUTH & EAST AFRICA
PORTUGAL, MEDITERRANEAN,
EGYPT, LEVANT & BLACK SEA,
RED SEA & PERSIAN GULF
INDIA & PAKISTAN,
CEYLON & BURMA
MALAYA, PHILIPPINES, CHINA & JAPAN
AUSTRALIA & NEW ZEALAND.

Hall Line, Ellerman & Bucknall Line,
City Line, Ellerman Line
Papayanni Line,
Westcott & Laurance Line,

Head Office
104-7, LEADENHALL STREET,
LONDON, E.C.3.
LIVERPOOL—Tower Buildings,
Water Street
GLASGOW—75, Bothwell St., C.2

World-Wide Services

CARGO FROM
Hamburg, Bremen, London & East Coast U.K. Ports
TO
U.S.A. GULF PORTS
BROWN, JENKINSON & CO., LTD., 113 Fenchurch Street, E.C.3.
WESTBOUND LOADING BROKERS

Galveston, Houston, New Orleans & Mobile
to East Coast U.K. & North Continent

by **ROPNER LINE**

SIR R. ROPNER & CO. (MANAGEMENT) LTD.
Coniscliffe Road, Darlington.
Telephone 2811:

or

SIR R. ROPNER & CO. (LONDON) LTD.
22 St. Mary Axe, London E.C.3
Telephone: AVE 2153

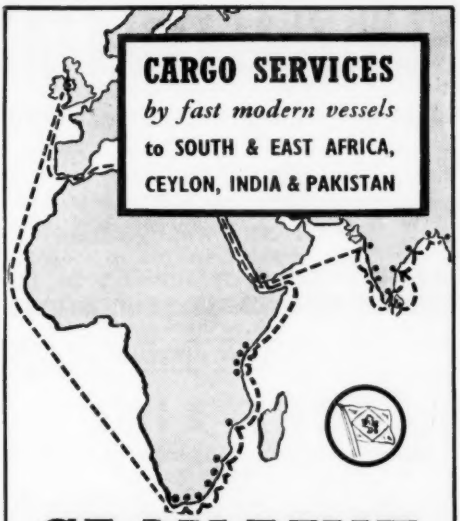
STRACHAN SHIPPING CO.—New Orleans and all U.S. Gulf Ports.

ROYAL MAIL LINES

to **SOUTH AMERICA**
BRAZIL · URUGUAY
ARGENTINA
WEST INDIES
SPANISH MAIN
CENTRAL AMERICA
NORTH PACIFIC COAST

ROYAL MAIL LINES, LTD.
London: Royal Mail House, Leadenhall Street, E.C.3. America House, Cockspur Street, S.W.1.
Liverpool: The P.S.N. Co., Pacific Building, James Street, (2)

CARGO SERVICES
by fast modern vessels
to SOUTH & EAST AFRICA,
CEYLON, INDIA & PAKISTAN



CLAN LINE
For all details apply to the Managers:
CAYZER, IRVINE & CO., LTD.
LONDON · LIVERPOOL · GLASGOW

UNION-CASTLE LINE

to

South and East Africa

WEEKLY MAIL SERVICE
from SOUTHAMPTON
also Intermediate & East African
Sailings from LONDON

Head Office:
3 FENCHURCH ST, LONDON, EC3
MAN 2550 (Passenger MAN 9104)
West End Passenger Agency:
125 PALL MALL, SW1 WHI 1911

P. S. N. C.

LIVERPOOL, BERMUDA, BAHAMAS, CUBA,
JAMAICA, PANAMA CANAL, WEST COAST OF
SOUTH AMERICA.
Also via Bahia Blanca & Punta Arenas

THE PACIFIC STEAM NAVIGATION CO.

Pacific Building, James St., Liverpool, 2
London Agents: Royal Mail Lines, Leadenhall St. E.C.3

Freight: McGregor, Gow & Holland, Ltd.
16, St. Helen's Place, London E.C.3

NEW ZEALAND LINE

PASSENGER & CARGO SERVICES via PANAMA

Particulars from :
J. B. WESTRAY & CO. LTD.,
138 Leadenhall Street, E.C.3.
Tel. : AVEnue 5220

THE NEW ZEALAND SHIPPING Co. Ltd.

ORIENT LINE *to* AUSTRALIA

FOR PARTICULARS APPLY ORIENT LINE
14 COCKSPUR ST., LONDON, S.W.1 Tel. TRA 7141
7 BISHOPSGATE, LONDON, E.C.2 Tel. MAN 3456
9 KINGSWAY, W.C.2 Tel. TEM 2218 or Agents

PORT LINE

U.K. to AUSTRALIA and NEW ZEALAND

NEW YORK to AUSTRALIA and NEW ZEALAND

PORT LINE LTD.

CUNARD HOUSE, 88, Leadenhall Street, London, E.C.3
'Phone : Avenue 1270. Telegrams : " Portships, Fen, London "

P&O and B.I.

- From United Kingdom and Continental ports to EGYPT, ADEN, RED SEA PORTS, INDIA, PAKISTAN, CEYLON, E. & S. AFRICA, MALAYA, CHINA, JAPAN, AUSTRALIA, etc.

For details of services, fares, etc., apply—
P. & O., 122, Leadenhall St., E. C. 3. • 14, Cockspur St. S. W. 1 • 9, Kingsway, W. C. 2 •
B. I. (Agents : Gray Dawes & Co.), 122, Leadenhall St., E. C. 3

HOULDER BROTHERS & CO. LTD.

Shipowners, Insurance Brokers, Passenger & General Forwarding Agents (Sea and Air)
REGULAR FAST SERVICES to RIVER PLATE
From Liverpool, London, Bristol Channel & Antwerp and to SOUTH AFRICA

FREIGHT ENGAGEMENTS made and goods insured and forwarded By Sea and Air
TO ALL PARTS OF THE WORLD

Head Office : 53, LEADENHALL STREET, LONDON, E.C.3

Branch Offices at Liverpool, Glasgow, Newport (Mon.), Bristol, Swansea, Manchester, Hull, Southampton, Birmingham, Sheffield, Bradford, Hanley, Dundee, Cape Town and Sydney (N.S.W.).
Representatives in Argentina and Uruguay : Soc. Anon Houlder Brothers & Co. (Argentina), Ltd., Buenos Aires, Rosario, La Plata and Montevideo.
Brazil : Houlder Brothers & Co., Brazil, Ltd., Rio de Janeiro and Santos.

BIBBY LINE

UNITED KINGDOM, CONTINENT, MARSEILLES, EGYPT SUDAN, CEYLON AND BURMA

All enquiries to —
BIBBY BROTHERS & CO., Martins Bank Building, Water Street, LIVERPOOL, 2.

BRITISH & CONTINENTAL STEAMSHIP CO., LTD.

AMSTERDAM . ROTTERDAM . DUNKIRK . ANTWERP . GHENT & TERNEUZEN from and to LIVERPOOL & MANCHESTER
ANTWERP & GHENT from and to GLASGOW
GHENT from and to BELFAST

AGENTS

LIVERPOOL and MANCHESTER:
For Rotterdam, Amsterdam and Dunkirk Steamers : Wilson, Son & Co.
For Antwerp, Ghent and Terneuzen Steamers : J. T. Fletcher & Co.
GARSTON : Ed. W. Turner & Son.
BARROW : James Fisher & Sons, Ltd.
GLASGOW : Clyde Shipping Co., Ltd.
BELFAST : G. Heyn & Sons Ltd. : James Little & Co., (Belfast), Ltd.
ANTWERP, GHENT, TERNEUZEN : John P. Best & Co., S.A.
ROTTERDAM : P. A. Van Es & Co.: Phs. Van Ommeren (Rotterdam) N.V.
AMSTERDAM : Van Es & Van Ommeren :Holland Steamship Co.
DUNKIRK : L. A. De Baecker.
LONDON : Phs. Van Ommeren (London), Ltd., Baltic House, 27, Leadenhall Street, E.C.3
PARIS : Phs. Van Ommeren (France) S.A., 11, Rue Tronchet, 8e

WILSON LINE, HULL

Grams" WILSONS, HULL" 'Phone No. 16180 (20 *lines*)

REGULAR SERVICES

From Hull, London, Liverpool, Manchester, Middlesbro', Newcastle, Aberdeen, Swansea, Newport, Antwerp, Dunkirk, etc. ; to and from Norway, Sweden, Denmark, Poland, Baltic States, Portugal, Mediterranean Adriatic & Levant Ports, Egypt, India, Pakistan, Canada & United States.

PASSENGERS Passenger Services to Norway, Sweden, Denmark, Poland, Italy, United States and Canada, etc.

MARINE INSURANCE Insurances arranged on Cargo by our own and other steamers to and from all ports at current rates of premium.

Lighter Owners Forwarding Agents, Warehouse Keepers and Sworn Weighers Bunkers supplied.

For Rates of Freight, Fares, Insurance, Forwarding, etc., apply to—
ELLERMAN'S WILSON LINE, Ltd., HULL
or Branch Offices at Leeds, Sheffield, Manchester, Birmingham, Bradford and Grimsby ; or London Agents—THE UNITED SHIPPING CO., Ltd., 108, Fenchurch St., London E.C.3., London Brokers for Indian and Pakistan Trade—GELLATLY, HANKEY & CO., Ltd., Dixon House, 1, Lloyds' Avenue, London, E.C.3., or 62, Pall Mall, S.W.1.

THE BANK LINE

OPERATING THE FOLLOWING SERVICES:

AMERICAN AND INDIAN LINE—Calcutta, Chittagong, Rangoon and Colombo to Halifax, Boston, New York, Philadelphia, Baltimore and Norfolk (Va.).

AMERICAN AND INDIAN BRANCH LINE SERVICE—Rangoon, Chittagong, Madras, Madras Coast, Colombo and Malabar Coast, (filling up if necessary at Aden and Port Sudan) to Halifax, Boston, New York, Philadelphia, Baltimore and Norfolk (Va.).

BOMBAY AMERICAN LINE—Bombay to New York and Philadelphia.

AMERICAN AND ORIENTAL LINE—U.S. Atlantic and Pacific Coast ports to Philippines, Japan, China, Hong Kong, Indonesia and Malaya, returning to Canada and U.S.A. via Suez Canal.

CALCUTTA to RIVER PLATE PORTS—Chittagong, Calcutta and Other Indian Ports, Colombo and Malabar Coast to Brazil, Montevideo, Buenos Aires, Rosario and Bahia Blanca.

INDIAN CHILEAN LINE—Calcutta, Chittagong, Rangoon, Singapore and Indonesia to West Coast of South American ports. Calling at Colombo and Cochin when opportunity offers.

INDIAN AFRICAN LINE } Carrying passengers and cargo from
INDIA-NATAL LINE } Rangoon, Chittagong, Calcutta, other Indian ports and Colombo to East and South African ports and vice versa. (Vessels of the India-Natal Line also call at Madagascar when opportunity offers.)

ORIENTAL AFRICAN LINE—Carrying passengers and cargo from Shanghai, Hong Kong, Philippines, Saigon, Bangkok and Malaya to Mauritius, Reunion, East and South African ports and vice versa. Taking cargo on Through Bills of Lading from Japan.

U.S. GULF to AUSTRALASIA—Regular sailings from all U.S. Gulf ports to all ports in Australia and New Zealand. Calling at Trinidad en route when sufficient inducement offers.

U.S. GULF to SOUTH AFRICA—U.S. Gulf ports to South and East African ports

PERSIAN GULF—General Merchants, Export, Import and Ship Agents.

For Freight and Particulars apply to—

ANDREW WEIR
SHIPPING & TRADING CO., LTD.
19-21, BURY STREET, LONDON, E.C.3.

ANGLO BALTIC LINES

U.K. PORTS
to
GDYNIA/GDANSK & FINNISH PORTS
also
KLAIPEDA (Memel) LIEPAJA (Liban)
RIGA and TALLINN
when conditions permit, and sufficient inducement offers.

For further particulars apply to—

UNITED BALTIC CORPORATION, LIMITED,
158, Fenchurch Street London, E.C.3

Telegrams: "Orienteako," London
Telephone No.: Mansion House 3311 (8 lines)

MAC ANDREW LINE

SPAIN AND MOROCCO

Regular Services from LONDON, LIVERPOOL and Principal U.K. Ports

Express Service by fast Motorships from LONDON and LIVERPOOL to BARCELONA

HALL'S LINE To LISBON and GIBRALTAR

Express Service by fast Motorships from LONDON to GIBRALTAR

GLYNN LINE To WEST ITALY and SICILY

For Freight and Passage apply to—

MACANDREWS & CO., LTD.,
19, Leadenhall St., London, E.C.3.

Telephone: MANSION HOUSE 1543

Cunard Building, Water St., Liverpool, 3 Tel: CENTRAL 3922
BRANCH HOUSES at ★Barcelona, ★Madrid, ★Tarragona ★Castellon, ★Burriana, ★Valencia, ★Gandia, ★Denia ★Carthagena ★Almeria, ★Malaga, ★Seville and Bilbao

Branches with ★ act as Lloyd's Agents.

Agencies in all other principal ports

FURNESS LINES

FURNESS LINE
London to Philadelphia and New York.

FURNESS WEST INDIES LINE
New York to U.S. Virgin Islands, British & French West Indies, Venezuela and Trinidad.

Newfoundland and Canada to U.S. Virgin Islands, British & French West Indies, Venezuela & Trinidad.

FURNESS RED CROSS LINE
New York to Saint John, N.B./ Halifax, N.S./ St. John's and Corner Brook, N.F.

FURNESS-WARREN LINE
Liverpool to St. John's, Newfoundland, Halifax, N.S., and Boston.

FURNESS PACIFIC SERVICE
Manchester to Los Angeles, San Francisco, Victoria and Vancouver, B.C., via Panama Canal.

Loading Brokers:—Manchester Liners Ltd. Manchester 2.

FURNESS BERMUDA LINE
New York to Bermuda.

JOHNSTON WARREN LINE
Antwerp, Hamburg and Liverpool to Piraeus, Volo, Thessaloniki, Izmir, Haydar Pasha, Istanbul, Black Sea, Roumanian and Danubian Ports.

For further information apply:—
FURNESS WITHY & CO., LTD.,
Furness House, Leadenhall Street, London, E.C.3.
Also at LIVERPOOL, GLASGOW, LEITH, MIDDLESBRO' AND NEWCASTLE.

PRINCE LINE
CANADA & U.S.A. — BRAZIL — RIVER PLATE — BRAZIL
TRINIDAD — U.S.A. & CANADA
U.S.A. — SOUTH & EAST AFRICA — U.S.A.
U.S.A. — FAR EAST — E. CANADA — U.S.A
U.K. — MEDITERRANEAN — U.K.
ARGENTINA & URUGUAY — U.K.

For further information apply—
PRINCE LINE LTD. :: 56, Leadenhall St., E.C.3

ADMIRALTY CHARTS

The LATEST EDITIONS of Charts, Plans and Sailing Directions published by the Hydrographic Dept., can be obtained from

J. D. POTTER, Admiralty Agent for Charts, Publisher of Nautical Books, and Bookseller.

145, MINORIES, LONDON, E.C.3. (*Tel. : Royal* 1369)

Large Stocks of Nautical and Technical Books of all descriptions.

Efficiently equipped for timber, wood pulp and all cargoes

PORT OF PRESTON

Quick Despatch

Bunkering Facilities

Write : H. J. Hanna,
General Traffic Manager, Preston

UNITED TOWING CO. LTD.

TELEGRAMS "TOWING" · **HULL** · TELEPHONES 15514 (all hours)

INVITATION TO TENDER FOR SHARES

TENDERS are invited by the Board of Trade for the purchase, subject to the Special Conditions of Sale, of the shares described in the fourth column of the schedule below. Attention is drawn to the facts (1), that in accepting any tender and directing the Custodian of Enemy Property in England to effect the sale, the Board will be guided by the national interests, and (2) that the legal right to transfer the shares is vested in the Custodian who will, by direction of the Board of Trade, transfer title to an approved purchaser.

The shares cannot be split up and a tender must be made for the whole of the shares. Tenders must be in the form provided.

A copy of the Particulars of Sale, the Special Conditions of Sale and the Tender Form may be obtained on application to the Administration of Enemy Property Department (Treasury and Board of Trade), T.E.4 (A), Lacon House, Theobalds Road, London, W.C.1.

The tenders must be addressed to the Controller General of the Administration of Enemy Property Department at the above address and must be delivered there in a sealed envelope not later than 10 a.m. on 30th March, 1951. The envelope must be clearly marked on the outside :—

Tender No. 55

Due 10 a.m. 30th March, 1951.

SCHEDULE

1 Tender No.	2 Company in which the shares are held	3 Share Capital	4 Number of shares offered for sale
55	The Newbigin Steam Shipping Co., Ltd., Mansion House Chambers, The Close, Newcastle upon Tyne, 1. Shipowners.	Nominal £80,000. Issued £67,280 in 6,728 shares of £10 each, fully paid.	80 shares of £10 each, fully paid.

REVERSING ENGINES

DIRECT ACTING FIXED AND OSCILLATING TYPES WITH PUMP AND CHANGE COCK OR RACK AND PINION HAND GEAR.

MACTAGGART, SCOTT & CO., LTD.

Contractors to British and Foreign Admiralties.

LOANHEAD—EDINBURGH

London J. M. EDMISTON, 31-33, Bishopsgate, E.C.2.

FOR SALE

TUGS FOR SALE 250 h.p. 70ft. Hull and Diesel engine reconditioned. Demonstrations in Thames Estuary. Apply Fairmile Construction Co. Ltd., Cobham, Surrey.

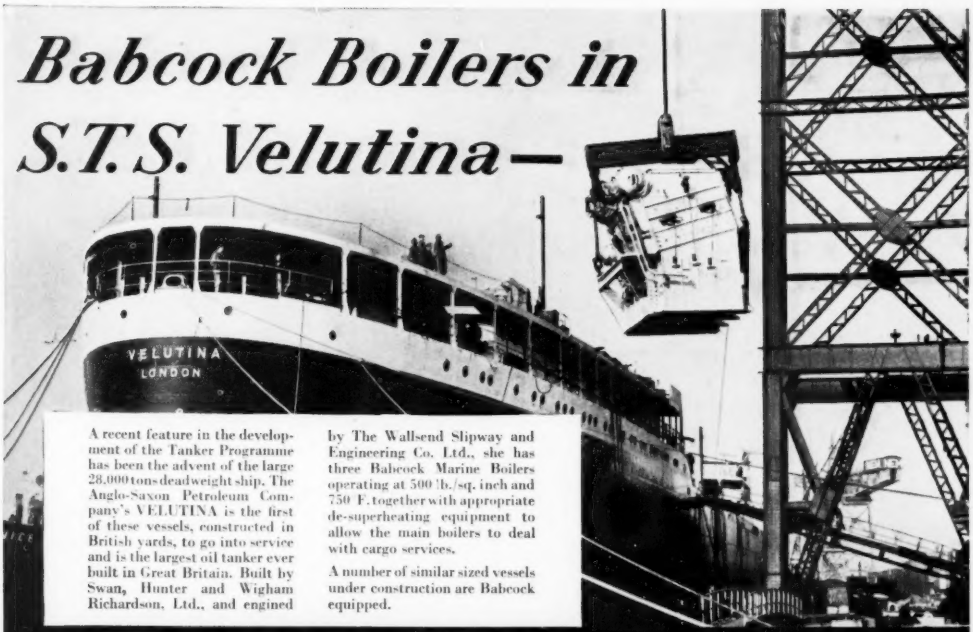
SITUATIONS VACANT

VACANCY for Editorial Secretary, good speeds and preferably with knowledge of shipping and shipbuilding terms, five day week. Write, stating qualifications and salary required. Box No. 205, THE SHIPPING WORLD LTD., 2, Arundel Street, London, W.C.2.

INDEX TO ADVERTISERS IN THIS ISSUE

	Page
Airscrew Co. & Jicwood, Ltd.	A6
Alexander, W. H. J., Ltd.	A14
Anderson, Green & Co., Ltd.	A18
Anglo-Baltic Lines	A19
Anglo-Iranian Oil Co., Ltd.	A2
Babcock & Wilcox, Ltd.	A21
Bailey, C. H., Ltd.	A15
Bank Line	A19
Bibby Brothers & Co.	A18
Blundell & Crompton, Ltd.	A6
British Polar Engines, Ltd.	A5
British & Continental Steamship Co., Ltd.	A18
British Paints, Ltd.	Back Cover
Brown, John, & Co., Ltd.	A11
Cayzer Irvine & Co., Ltd.	A17
Clan Line	A17
Clarke, Chapman & Co., Ltd.	A12
Cory, Wm., & Son, Ltd.	A2
Crichton, C. & H., Ltd.	A14
Cunard White Star, Ltd.	A21
De Keyser Thornton, S.A.	A14
Doxford, Wm., & Sons, Ltd.	A8
Drysdale & Co., Ltd.	A4
Eagle Aviation, Ltd.	A16
Edison Swan Electric Co., Ltd.	A7
Ellerman Lines	A17
Ellerman's Wilson Line, Ltd.	A18
Furness Withy & Co., Ltd.	A19
General Steam Navigation Co., Ltd.	A16
Grayson, Rollo & Clover Docks, Ltd.	Front Cover
Gray, Wm., & Co., Ltd.	A21
Harland & Wolff, Ltd.	A10
Houlder Brothers & Co., Ltd.	A18
Kincaid, J. G., & Co., Ltd.	A3
MacAndrews & Co., Ltd.	A19
MacTaggart Scott & Co., Ltd.	A20
McGeoch, Wm., & Co., Ltd.	A15
Moss Hutchison Line, Ltd.	A16
New Zealand Shipping Co., Ltd.	A18
North of England Protecting Indemnity & War Risks Association	A16
Orient Line	A18
Pacific Steam Navigation Co.	A17
Palm Line, Ltd.	A16
P. & O. and B. I. Companies	A18
Port Line, Ltd.	A18
Potter, J. D.	A20
Preston, Port of Authority	A20
Prince Line, Ltd.	A19
Redifon, Ltd.	A4
Robb, Henry, Ltd	A13
Ropner, Sir R., & Co. (Management), Ltd.	A17
Royal Mail Lines, Ltd.	A17
Shaw Savill & Albion Co., Ltd.	A16
Shell Mex & B.P. Ltd.	A9
Stream-Line Filters, Ltd.	A6
Thornycroft, John I., & Co., Ltd.	A12
Turners (Photography) Ltd.	A15
Tyne Gangway Co., Ltd.	A16
Union-Castle Mail Steamship Co., Ltd	A17
United Baltic Corporation	A19
United Towing Co., Ltd.	A20
Weir, Andrew, Shipping & Trading Co., Ltd.	A19
Yarwood, W. J., & Sons, Ltd.	A16

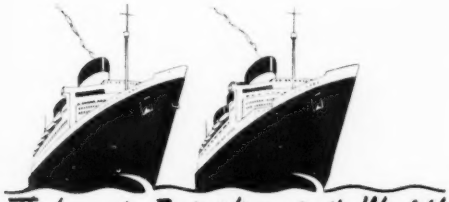
Babcock Boilers in S.T.S. Velutina—



A recent feature in the development of the Tanker Programme has been the advent of the large 28,000 tons deadweight ship. The Anglo-Saxon Petroleum Company's VELUTINA is the first of these vessels, constructed in British yards, to go into service and is the largest oil tanker ever built in Great Britain. Built by Swan, Hunter and Wigham Richardson, Ltd., and engined by The Wallsend Slipway and Engineering Co. Ltd., she has three Babcock Marine Boilers operating at 500 lb./sq. inch and 750° F. together with appropriate de-superheating equipment to allow the main boilers to deal with cargo services.

A number of similar sized vessels under construction are Babcock equipped.

BABCOCK & WILCOX LTD., BABCOCK HOUSE, FARRINGDON ST., LONDON, E.C.4.



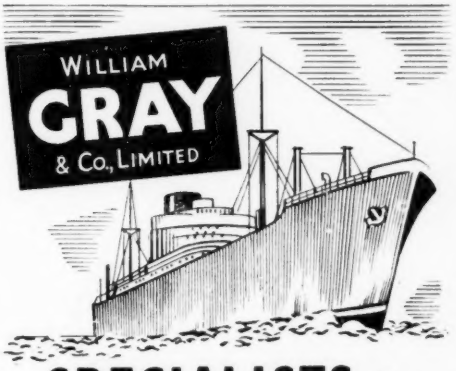
The Largest & Fastest Liners in the World!

CUNARD IS YOUR WAY TO ALL NORTH AMERICA

The great fleet of magnificent Cunard liners maintain an unrivalled service on the North Atlantic sea routes. Led by the two famous "QUEENS" on the express route, these ships provide service, cuisine and comfort which is unsurpassed afloat. This superlative service has for over a century earned this famous fleet pride of place on the Atlantic, and has made them the first choice of the discerning traveller.

For full information apply: Pier Head, Liverpool, 3. (Central 9201); 15 Lower Regent St., London, S.W.1. (Whitehall 7890); 88 Leadenhall St., London, E.C.3. (Avenue 3010) or principal travel agencies.

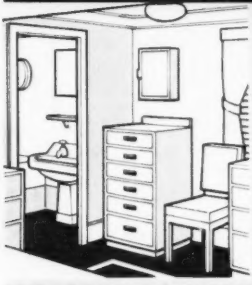
Cunard



SPECIALISTS in MODERN CARGO VESSEL CONSTRUCTION

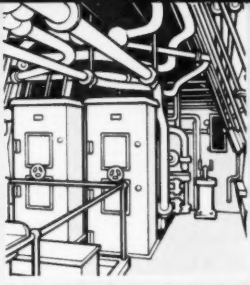
SHIPBUILDERS AND ENGINEERS
SHIP, ENGINE AND BOILER REPAIRERS

WEST HARTLEPOOL



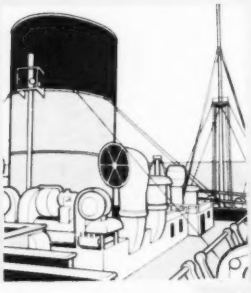
STATE ROOMS & CABINS

HOLDS, TANKS & BILGES



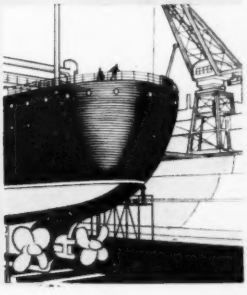
BOILERS AND TURBINES

REFRIGERATOR SPACES



FUNNELS, DECKS & SPARS

HULLS & BOTTOMS



The Navy use it too!

BRITISH PAINTS LIMITED marine division

Crewe House, 15 Curzon Street, London, W.1 (Telephone: Grosvenor 6401/5)

AND AT LIVERPOOL, NEWCASTLE-UPON-TYNE, GLASGOW, CARDIFF

Published every Wednesday by the Proprietors, THE SHIPPING WORLD LTD., at Effingham House, Arundel Street, Strand, London, W.C.2, and Printed in Great Britain by the Press at Coombelands Ltd., Addlestone. Agents for Australia and New Zealand: Gordon & Gotch (A'sia) Ltd.; for South Africa: Central News Agency, Ltd. for Canada: Gordon & Gotch (Canada), Ltd.; for U.S.A.: The International News Co. Registered as a Newspaper.